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The 1965-1968 progress report of the Western States Small Schools Project focuses on the problem and challenge posed by small schools, which have thus far lacked the depth of resources compared to urban schools. The goals of the project are to assist small schools to: (1) provide individualized programs of career selection education; (2) develop methods and techniques of preschool education to overcome cultural disadvantages prevalent in isolated communities; and (3) develop the organizational and instructional patterns essential to successful programs of continuous progress and individualized instruction. Each objective is presented in a separate section with description of the problem involved, methods or programs, evaluation, and observations. Included are several guidelines for educational activities related to individualized instruction which free the teacher to plan curriculum and choose materials. A chapter is devoted to 2 learning theories with practical application to individualized learning by both students and teachers. (CM)

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QUALITY & the small SCHOOL

A progress report on the programs developed by the Western States Small School Project for Colorado, 1965-1968

COLORADO DEPARTMENT OF EDUCATION/DENVER, COLORADO
Byron W. Hansford — Commissioner of Education
DENVER, 1968

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ABSTRACT The 1965-1968 progress report of the Western States Small Schools Project focuses on the problem and challenge posed by small schools, which have thus far lacked the depth of resources compared to urban schools. The goals of the project are to assist small schools to: (1) provide individualized programs of career selection education; (2) develop methods and techniques of preschool education to overcome cultural disadvantages prevalent in isolated communities; and (3) develop the organizational and instructional patterns essential to successful programs of continuous progress and individualized instruction. Each objective is presented in a separate section with description of the problem involved, methods or programs, evaluation, and observations. Included are several guidelines for educational activities related to individualized instruction which free the teacher to plan curriculum and choose materials. A chapter is devoted to 2 learning theories with practical application to individualized learning by both students and teachers. (CM)

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QUALITY AND THE SMALL SCHOOL

Prepared for
WESTERN STATES SMALL SCHOOLS PROJECT FOR COLORADO and
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Denver, Colorado
August 1968

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WESTERN STATES SMALL SCHOOLS PROJECT FOR
COLORADO PILOT DEMONSTRATION SCHOOL DISTRICTS 1965-1968

Career Selection Education

Haxtun

De Beque

Meeker

Preschool Programs for Rural Areas

Big Sandy (Simla)

Woodlin

Individualized Instruction and Continuous Progress

Aspen

Big Sandy (Simla)

Clear Creek

De Beque

Haxtun

LaVeta

Meeker

Nederland (Boulder Valley)

Ouray

Rangely

Sangre de Cristo

Woodlin

The Western States Small Schools Project is supported by a grant from the Ford Foundation.

FOREWORD

Educators are seldom accused of inability to draw attention to problems. If there is a garden variety complaint in this regard, it is that they fail to match their statement of the problem with an outline of a workable solution.

It is, therefore, a source of gratification to say that this report describes a problem for which solutions have been drawn; a challenge to which there has been a positive and effective response.

The problem and the challenge, of course, are those posed by the small school which historically has lacked the depth of resource in personnel, in equipment, and in curriculum that has developed in large urban schools. Colorado has small schools; Colorado is doing something about its problems.

The response has been in a number of directions, several of them described in this progress report. What is important to keep in mind is that while the programs may range from preschool for 3- or 4-year-olds to career selection education for high school students, the thrust of the comprehensive program of the Western States Small Schools Project is constant—to bring true equality of education to the small school.

It would be foolish, of course, to say that we have found the way for everyone to follow. What we can say with confidence is that we have learned that facing the task forthrightly, intelligently and professionally pays extraordinary dividends.

I am proud that we in the Rocky Mountain West have taken the lead in this important work. I am proud that Colorado educators more than a decade ago turned their attention vigorously to the problem of the small school. I salute them for their determination and their results. Arizona, New Mexico, Nevada, and Utah some time ago joined us to make up the team that carries the ideal and the realization forward; I have been delighted to have these strong colleagues join with Colorado in a project that already has meant, and will continue to mean, much to the nation and the world.

Byron W. Hansford
Colorado Commissioner of Education

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SECTION I
HOW WE GOT HERE

A high school senior disturbed because a preschooler doesn't show what he considers sufficient creativity . . .

Another high school senior getting some work-study experience in a garage, and as a result becoming motivated to a career and sensibly pursuing the training needed for the career . . .

A theoretical consideration of the learning styles of pupils and the teaching styles of teachers . . .

An analysis of what the teacher must do, contrasted with what may be done by machines, by environment, by others . . .

These are some of the elements of this report. What unifies them? Why are they packaged here?

The answer is threefold.

1. In the broadest sense, they are unified because they all deal with the teaching-learning process.

2. In the narrowest sense, they are unified because they are all products of the Colorado portion of the Western States Small Schools Project.

3. At the most meaningful level, they are unified because they all grapple equally with a problem at once baffling and of great importance: How to build high quality in small schools.

The question is important because it goes to the very heart of the ideal of equality of educational opportunity. Statistics may be, and have voluminously been, cited to demonstrate how the United States is moving rapidly toward urbanization; how increasing proportions of the total population are becoming concentrated in a small number of great metropolitan areas.

But the movement toward concentration compounds rather than eliminates the educational problem of the millions who are left in the isolated, the rural, the sparsely-settled areas. There are now fewer of them than there once were; so their areas have become more isolated, more rural, more sparse. But they are millions. There are more than 9,000 small high schools (fewer than 200 pupils in grades 9-12) in the United States today, and much larger numbers of small elementary schools. In Colorado—which ranks among the most heavily urbanized states—more than half the existing schools are small. Perhaps in Colorado as in the nation, further rational reorganization of school districts would eliminate some of these small schools. But the fact remains that, simply because of geography and population spread, scores of these small schools are necessary now and will remain so in the foreseeable future.

What is the problem of small schools? Quite simply, a shortage of resources. Even if they are treated most generously financially by the state and the local community and their per-pupil expenditures are much higher than the statewide average, they do not have the personnel to offer a comprehensive curriculum, the specialists necessary to realize the ideal of developing each pupil to the utmost of his ability, the specialized space, or the materials and equipment essential for a reasonably modern presentation of a reasonably broad range of opportunities. Simply because it is small, its pupils and teachers suffer disadvantage.

The nation is slowly and laboriously moving toward curing a somewhat analagous proposition: The proposition that simply because some people are Negroes, Hispanos, they must suffer educational disadvantage. The 14-year history of movement toward equality of opportunity for all despite race or ethnic origin is vivid testimony to the difficulty of wiping out disadvantage once it is permitted to take root.

The attack aimed at wiping out disadvantage springing from small size is far short of the scope or scale of the other attack. Interesting work has been done in some other areas of the nation, notably the Catskills region of New York and in Texas and Oregon, but the major attack has been mounted in the Rocky Mountain states.

Interestingly enough, the attack on disadvantage deriving from small size comes at about the same time as the attack on racial disadvantage. The Supreme Court's decision in the Brown case that started the unfinished story of wiping out racial inequities was handed down in 1954; the Rocky Mountain Area Project for Small High Schools in Colorado got under way in 1957.

Headlines tell with sometimes depressing regularity the progress and the setbacks of the war against racial inequity.

The reports of the war against size inequity come less often. This is one of them.

It reports on progress in the third major battle waged in Colorado.

The first battle was Colorado's 1957-61 Rocky Mountain Area Project for Small High Schools. The project investigated a number of techniques for improving learning in the small high school: small group techniques, teaching multiple classes, correspondence courses, use of community resources, use of films for teaching sciences, youth seminar programs, variations in scheduling.

Its successor was the Western States Small School Project, established in 1962 as a three and one-half year demonstration project funded by the Ford Foundation and involving Arizona, Colorado, Nevada, New Mexico and Utah. All the cooperating states worked on use of self-instructional devices and programmed materials for individualized instruction and continuous progress. In addition, each state pursued its own special course toward the common goal—more quality in the small school.

The third major battle started in 1965 when the Ford Foundation, finding the progress satisfactory, extended the grant for three years.

The Colorado concentration since then has been in three areas:

1. Career selection.
2. Preschool programs for rural areas.
3. Continuous progress and individualization of instruction.

This report indicates what's been happening in those three areas of concentration.

It reports this in two quite different fashions. One fashion is a kind of narrative of what happened and how it seemed to work. This kind of reporting is done with respect to preschool and career selection. The other fashion is more theoretical. It addresses itself to the pre-investment, the actual experience, and the results both predictable and actual. This kind of reporting is done with respect to continuous progress and individualization of instruction.

Neither form of reporting is to be taken as a final and definitive statement. They are progress reports; they share with

those who are interested the actual results and the theorizing springing from the project.

These are the formal goals of the Colorado elements of the project and of the professionals who report on progress in this book.

I. CAREER SELECTION

Goal: To assist small schools to provide individualized programs of career selection education sufficiently broad in scope and closely articulated to meet all students' needs and abilities.

Reporters:

Al Renzelman, principal and Career Selection Agent (CSA) at Haxtun High School, Haxtun, Colorado.

Mrs. Margaret Marx, Career Selection Agent (CSA), De Beque High School, De Beque, Colorado.

II. PRESCHOOL

Goal: To assist small schools to develop methods and techniques of preschool education that will compensate for the cultural disadvantage prevalent in isolated communities.

Reporter:

Mrs. Chayce Miller, teacher, Big Sandy School District #100, Simla, Colorado.

III. CONTINUOUS PROGRESS AND INDIVIDUALIZED INSTRUCTION

Goal: To assist small schools to develop those organizational and instructional patterns, those groups of the interaction and relationships of teacher, student, materials and environment essential to successful programs of continuous progress and individualized instruction.

Reporters:

John Meier, professor: Colorado State College and the Rocky Mountain Educational Laboratory; Consultant to Western States Small Schools Project for Colorado.

Barbara Bree Fischer, the University Elementary School, University of California at Los Angeles and consultant to Western States Small Schools Project; and Louis Fischer, professor, San Fernando State College, Northridge, California.

Robert King, superintendent of schools, Meeker School District RE 1, Meeker, Colorado.

Charles Jaquette, who at the time of writing was assistant principal, Meeker High School, Meeker, Colorado.

Each of them has his own style of reporting. Several report on problems and difficulties as well as identifiable success and progress. In all of them, however, there is a very clear note of optimism—in fact, a kind of urgent affirmation that, given the resources, the small school can give its students opportunity equal to that enjoyed by students of larger, urban schools.

They make it quite clear that of the educational resources required, good people and good concepts are of major importance; appropriate materials are of supporting importance.

They make it quite clear, too, that support from the outside (the national foundation, the state education department, the consultants from here and there) provide inputs of great significance—but that the job is done by the local professionals at the local level.

And this, of course, is the name of the game. It is the professionals in the small schools which exist who must extend the immediate opportunity to the students who attend these schools—and it is the larger world that must give these professionals and these students the resources necessary to make opportunity a fact rather than a word. It is in this spirit that this progress report must be read.

REPAIRS

SECTION II
GETTING REALISTIC ABOUT WORK

Six small high schools in Colorado are confronting in a new, structured and hopeful way a question that traditionally has been beyond the capacity of the small school: How do we really prepare all our students for what's awaiting them after graduation?

The traditional approach has been to give everybody a generalized kind of curriculum, more college-preparatory than anything else, sprinkled sometimes with a few vocational offerings centered on agriculture and home economics. The long-lasting flight from the rural areas means, of course, that comparatively few graduates will return to hold farming jobs; but, for lack of an alternative or for lack of resources to attain an alternative, the students have typically been unable to receive a more nearly realistic education.

Career Selection Education is that program of the Western States Small Schools Project which has helped small schools confront the problem. The programs at Haxtun, De Beque, and Meeker have developed a body of experience; the program at Clear Creek started in 1967. These four are the official participants in a new phase of the program opening in September 1968 with funding under the Vocational Act of 1963. The high schools at Rangely and Woodlin are also using the program, going through similar but not identical experiences as the other four schools, working like the other four now on curriculum development for Career Selection Education but not funded by the new Federal grants.

The differences among the programs are as important as their similarities. All are geared to the common goal—the provision of individualized programs of career selection broad enough in scope and clearly articulated to meet all the students' needs and abilities. But beyond that common goal, the programs are building up a wealth of information on how differing approaches work—how, for instance, actual employment differs in motivational and learning effect from observation and study of employment.

This section reports on two of the programs:

1) Haxtun offers an elective program for all high school pupils, particularly juniors and seniors. The program starts with vocational guidance, including self-appraisal and a survey of job opportunities. It then moves into on-the-job activities, with scheduling flexible enough to permit from one period to half a day for Career Selection Education. It arranges for work experience at Sterling, 30 miles away. Important in the project is four-way contact between and among the school, the employer, the parent and the student.

2) De Beque involves all juniors and seniors in its project. The emphasis has been on vocational guidance. Students have been taken in small groups to Grand Junction, 30 miles away, for testing at the State Employment Office. There they not only have been tested; they have seen people applying for jobs, being hired, or being refused for lack of education or other causes. Also arrangements have been made for job observation at Grand Junction.

IIA

The Haxtun report is written by Al Renzelman, principal of the Haxtun High School who has also taken on the crucial role of Career Selection Agent.

Mr. Renzelman's decision to become an educator was a mature one. Son of a Northeastern Colorado farm family, he farmed with his father before World War II military service. On discharge, he returned to farming for a decade. It was in 1956, when he was 33 years old, that he enrolled at Colorado State University and took a B.S. in agricultural education, with minors in biology and economics.

His teaching career has been concentrated at Haxtun High School. He started there as a vocational agriculture instructor in 1959 after earning his bachelor degree. In 1963 he took a year off to win his master of arts in teaching degree at Cornell University, with minors in administration and guidance. He returned to Haxtun High in 1964 as guidance counselor, and was named principal in 1966—the same year in which he took on the central role of Career Selection Agent. It was in the same year he won the Pfizer Prize as one of the three outstanding vocational agriculture teachers in the nation.

* * * * * *

Career Selection Education at Haxtun High School has defined three specific objectives in keeping with the broad goal of the five-state project. These objectives are to help students:

1. make intelligent career selections
2. develop skills useful in post-high school education
3. develop specific job entry skills.

The program has been implemented through adding to the curriculum a course entitled "Vocations." It is an elective open to any high school student; however, the majority of students electing it are juniors and seniors.

They have the following enrollment options:

Option 1. One fifty-five minute period daily for one semester of classroom work and one-half unit of credit. The student spends the entire semester in the classroom studying the world of work, plus participating in various field trips to different technical schools and businesses. Classroom activities include a study of job attitudes and the relation to employment, interest and aptitude testing, learning to make a job analysis, viewing occupational film strips, studying career files, interviewing people on the job, reviewing brochures and catalogs from various schools, listening to resource speakers, and completing various other assignments relative to the world of work.

Option 2. A semester consisting of one fifty-five minute period per day plus seventy-two hours of on-the-job work

experience. The student obtains one full unit of credit for the semester by getting seventy–two hours of on-the-job work experience in addition to the regular classroom work mentioned in Option 1.

Option 3. One semester of seventy-two hours on-the-job training plus sixteen and one-half hours classroom training for one-half unit of credit following the completion of Option 1. The student may elect to spend four hours a week on the job. The fifth hour is spent each Friday in the classroom. If a student works after school or on Saturdays to obtain his four hours per week of training, then he is free during the regular vocational period, except for Fridays, to use the time for study in other areas. However, this free time must be planned with the instructor.

Option 4. One semester consisting of one hundred forty-four hours of on-the-job plus thirty-three hours of classroom training for one unit of credit. This Option is the same as Option 3 except that the student spends twice as much time on the job and receives one full unit of credit for the semester. Note: Options 3 and 4 may be repeated for additional credits.

Option 5. Students enrolled in typewriting, bookkeeping, home economics, vocational agriculture, or industrial arts may elect to take a part of their course work in a business house under the supervision of the vocations class instructor and the employer.

Instructor

The instructor of the Haxtun High School vocations course has a background in teaching vocational subjects, guidance counseling work, and administration. At the present time he is serving as Principal of the High School and also is Career Selection Agent. He has been with the Haxtun phase of the Project since its inception and has attended numerous workshops and conferences relative to career selection work.

Students

Students have primarily been non-college bound. The majority of the graduates are now employed on jobs, attending tech and vocational schools, or are in the Service. Several of the graduates are now enrolled in four-year colleges.

Facilities and Resources

The late Charles F. Kettering said, "We are limited only by our imagination." In a true sense this is the limit of this Project. The resources available, even in a small community, to help students for career selection and orientation to the world of work are tremendous. The merchants and business people of the Haxtun community have been most cooperative in providing job exploration and training situations. Where specific industries are not available at Haxtun, students have gone to Sterling, 30 miles west of Haxtun, or to Holyoke, which is 18 miles to the east.

Much resource material also exists in the form of literature, programmed texts, film strips, etc. This is used extensively during the student classroom orientation to the world of work.

The Regional U. S. Employment Office in Sterling has cooperated in administering G.A.T.B. exams. They also spend time counseling with each student.

The Program has used a number of resource persons from the Haxtun schools and community. The local commercial teacher is used each semester to present one lesson on how to write letters of application. The school superintendent presents a lesson on job interviews. All the vocations students report to the home economics department where they spend one week with the local home economics teacher, who works with them on the proper grooming needs for various types of work. Local business people are invited to talk to the class on different phases of employment. Students also interview persons in different areas of work.

Any facilities or instructional media of the Haxtun High School which might appropriately be used to help students make intelligent career choices and help orient the student to the world of work are available for use with the vocations class. The Haxtun High School has recently completed a one-hundred-by-eighty-foot addition to the existing forty-by-eighty Vocational Building. This addition will greatly enhance the vocational exploration and skills offering which the school itself can give to the vocational students.

Case Studies

The following case studies indicate how the Haxtun program works.

Case Study A

Neal was enrolled in the regular vocations course for two periods a day. He spent about ten weeks in the classroom, studying the world of work, job attitudes and job analysis, taking aptitude tests, learning how to write letters of application and the do's and don'ts for job interviews, viewing occupational film strips, interviewing people on the job, studying occupational titles, making field trips to various tech schools.

When Neal was nearing the end of his time in the vocations classroom, he indicated that he would like to further explore the world of work by working eight hours a week at a large garage in Sterling. The choice seemed to be in line with Neal's aptitudes and interests.

The instructor then went to the owner of the garage and explained the program, telling him that Neal was a senior student enrolled in the Haxtun High School Career Selection Education Program, and that he was in need of on-the-job training experience to further explore the world of work. Neal would write a letter of application and ask for an interview just as though he were applying for employment. The Career Selection Agent explained that following the interview he would meet with him and discuss ways in which Neal could improve his interview technique. The Career Selection Agent would then also counsel with Neal.

The owner suggested placing Neal under the shop foreman, where he would receive a variety of experiences pertinent to mechanical work.

The shop foreman gave Neal a choice as to the hours he wished to work. The foreman pointed out that more learning would probably be involved if Neal could spend longer periods of time on the job rather than coming in for only short periods of time.

Neal decided to work from two to five o'clock each Tuesday and Thursday afternoon and to work out the balance of seventy-two hours by working Saturdays and during vacation time.

The arrangement seemed to work quite well. Neal would leave each Tuesday and Thursday at 1:30 or at the beginning of

each sixth period. He was on the job by 2:00 p.m. He also worked during the Christmas holidays and actually ended the school year with some thirty hours of overtime. For this overtime he was paid. He did not receive pay for the eight hours per week which he worked in lieu of school time. However, he did receive two units of credit for his year's work in vocations.

On the job, Neal started out cleaning engines and washing cars. Soon he was removing engines, transmissions, and other parts from autos that were being overhauled. Here he also helped tear down the parts. He ended the year by helping a master mechanic reassemble the various car parts and he also worked some in one of the engine tune-up sections.

Neal liked the work and at this writing he is attending an automotive tech school in Denver. The garage liked Neal's job attitude and felt he showed considerable mechanical aptitude. The owner, in a final interview with Neal's instructor, said: " We need young men like Neal. When he finishes his tech school training, send him around; we would like to talk to him about a job."

Case Studies B and C

A Haxtun High School student who has not enrolled in the Western States Small Schools Project career selection course but is in some of the other vocational courses and who desires on-the-job training and career exploration experience may, with the consent of the Career Selection Agent, work through the career selection course and under the supervision of the Career Selection Agent gain job training and career exploration experience.

An example was Loretta, who wanted to become a nurse's aide. The Haxtun home economics teacher was willing to give her enough released time each day so that, by combining her Home Economics IV period and her study hall, she was able to spend two hours per school day and eight hours on Saturday working at the local hospital as a nurse's aide.

Butch was a student enrolled in Vocational Agriculture IV. He was able to spend two hours each morning at a local farm machinery agency, working as a mechanic's helper. He worked under the supervision of the Agency and the Career Selection Agent. Butch also spent one hour each Friday afternoon attending the regular vocations class—a time when all Career Selection Education students returned for reports and a discussion of their week's experience.

Follow-up Study

Each student is a unique individual, and certainly a different case could be reported for each student enrolled in the vocations course. The following follow-up study is a report of all of the students who have thus far been enrolled in the course, where they are today, and also their work experience while they were enrolled in the vocations course.

1965-66 Students

Art: Married. Now a farm laborer at Haxtun. Vocations work experience was in a garage at Sterling.

Gordon: Married. Working with the State Highway Department. Work experience was in an auto body shop at Sterling.

Tom: Carpenter in Haxtun. His experience was at the Haxtun Hospital.

Neal: Married. Attending automotive tech school in Denver. His vocations work experience was at a garage in Sterling.

Lloyd: Married. Working at a garage in Sterling. His experience was at a garage in Haxtun.

Alvin: U. S. Navy. Work experience in a service station.

Jerry: U. S. Air Corps. His work experience was in an automotive parts department in Sterling.

Charles: Working with his father on Haxtun farm. Work experience at a garage in Sterling.

Allen: Working at a Haxtun service station. His experience was with a garage in Holyoke.

Wayne: Garage mechanic apprentice at Holyoke. Work experience at a service station in Haxtun.

Bob: Student at Colorado State University; major, engineering. Work experience, assistant to the PE instructor..

Barry: A student at Northeastern Junior College; major, education. He was an assistant to several instructors.

Lee: Student at the University of Colorado; major, PE education. He was an assistant to the PE instructor.

Terry: Student at Colorado State University; major, education. He was an assistant to the guidance counselor.

Joe: U. S. Navy. He was an assistant to the vocational agriculture instructor.

Brad: Airline training school in Denver. His work experience was with a clothing store in Sterling.

Marie: Photo studio in Nebraska. She worked with a photo studio in Haxtun.

1966-67 Students

Jay: Drop-out. Farming with father at Haxtun. Work experience at a service station.

Tom: In school. Working part time on a farm and also now enrolled for his second year of vocations work. His first work experience was at a garage in Sterling.

Warren: In school. His experience was at a garage in Sterling. In vocations for the second year, Warren wants a job working with a local small appliance repairman.

Dean: Student at Northeastern Junior College in physical education. He was assistant to the PE instructor.

Sharon: Attending beauty school in Pueblo. Her work experience was at the Haxtun dry cleaner.

Dena: Airline stewardess school in Kansas City. Her work experience was at a bakery in Holyoke.

Shirley: Has moved to Nebraska and is finishing her senior year. Her work experience was at a drug store in Haxtun.

John: A drop-out. Now doing odd jobs. Work experience at the Haxtun shoe shop.

Dennis: In school and enrolled in his second year of vocations, working part time with a cement company. His work experience last year was with an upholstery shop in Sterling.

Mike: In school and enrolled in his second year of vocations. Experience at a service station.

Pat: In school. Second year vocations student. Working as an orderly at the local hospital. His experience last year was in a restaurant.

Roger: Operating heavy equipment with a Haxtun land leveling company. His experience last year was at a grocery store in Haxtun.

Butch: Preparing to enter an automotive tech school. His experience last year was with a farm machinery agency.

Evaluation

Students are much more aware of the world of work and thus much more aware of the many careers from which to make selections. The many factors to consider in making an intelligent career choice are covered quite extensively in the first semester of classroom orientation into the world of work. A look at the follow-up study contained in this report points out that certainly not all of the students are in the same areas in which they received their training. However, this training must be recognized as also being useful for career selection purposes.

As to the development of specific job entry skills, the accomplishment of this objective will vary, depending upon the final job choice made by the student. A number of the students have been offered employment in the business establishment where they were working.

At Haxtun a number of sub-objectives were developed to implement the program. Following are the objectives toward which we feel we are making reasonable progress:

1. To develop competencies and skills that are generalizeable to a broad family of occupations.

   Discussion: Perhaps the job attitude training in the classroom is the factor that is most generalizeable to a broad family of occupations. Industry tells us that some 80 percent of the jobs lost are lost because of poor job attitudes rather than the lack of skills. We feel that we are doing a lot of work in this area, not only in the classroom but also because the Career Selection Agent and the employer counsel with the student on the job. This helps the student to develop good job attitudes. *It is a most important phase of the training.*

2. To help student stay in school and also to do better work by providing a program that has relevance to his interest, capacity, and goals.

   Discussion: We are working with a group that has considerable dropout potential, and while we have not held all of the students–we had two dropouts last year–we have been able to hold some of the students who otherwise would probably be dropouts.

3. To identify and acquire resources such as filmstrips, video tapes, tape recordings, laboratory manuals, textbooks, etc., to supplement the resources accessible in the community.

   Discussion: There are many such resources available. These we are gathering more and more.

4. To identify the community resources available to the Haxtun High School and to determine the contribution each of these resources can make to the instructional program.

   Discussion: Although no formal survey as such has been made, yet through the Career Selection Agent a continual number of community resources are being added to the files. The people of the communities of Haxtun, Sterling, and Holyoke have accepted the program very well. Perhaps part of this is due to the fact that a student receives high school credit for his work rather than pay. In a community such as Haxtun, this is a very important factor. If the merchant must pay the student plus help train him, this sometimes becomes almost an impossibility. Students in the Haxtun program are paid only for the hours beyond the hours required for school credit.

5. To obtain job training should the student, following high school, want a work skill to help him get a good part-time job while continuing his education.

   Discussion: Although the percentage at present is small, some students have been able to obtain employment because of their job training in the vocations program. This is helping a few students continue their higher education.

6. To more actively involve other instructors in helping to teach the course.

   Discussion: To date the home economics, industrial arts, vocational agriculture, and PE instructors have helped to teach the course, have worked with students, and have counseled with them. The commercial instructor and the superintendent have taught some of the vocation classes.

7. To develop an occupation library to provide more resource material.

   Discussion: This objective is slowly being implemented. More and more material is being placed on file. Several books have been purchased. We are slowly building an occupations library to provide more resource material.

Three of the seven objectives mentioned in the WSSSP proposal to the Ford Foundation, *Education for Career Selection and Orientation to the World of Work,* have not been met:

1. To adopt and develop specific lesson plans for the various content areas to be included in the vocations course.
2. To provide information to the parents which will result in the parents offering more realistic guidance to their children.
3. To provide information to the community that encourages rational career selection.

   Discussion: It is felt that the development of good lesson plans for the various areas would be helpful to this program. Development of lesson plans is a project which perhaps can best be accomplished by the individual instructor within the program. In the other two objectives, little has actually been done to provide information to the parents to help them to help their children to make more realistic choices. Slowly, information is being provided to the community; however, this is not a planned program. There has been little in the press. The Haxtun vocations program is something which should be written up and published. This we have not done.

Area Evaluation

The 1965 Proposal to the Ford Foundation for the Career Selection and Orientation to the World of Work program contained plans for evaluating a number of areas. Some of these are:

1. Relationships between personal and academic background of the CSA and his effectiveness in program development and management.

   Discussion: In the Haxtun program the Career Selection Agent has a background in guidance, previous experience in teaching vocational subjects, and considerable public relations experience in sales and extension work. These have been valuable in helping to develop the program. From the guidance background comes a knowledge of testing, counselling, and various psychological factors. The college degree of a CSA perhaps is not as important

an item as the items mentioned. Also a knowledge of vocational areas, training in vocational teaching methods, training in vocational education, have been most helpful in developing and managing the Haxtun program.

2. The extent and effectiveness of community agency and business participation in various kinds and sizes of communities.

   Discussion: Haxtun is a small community of approximately 1,000 people. The number of job training and exploration agencies is thus limited. However, there is very little limit to the resources available to job attitudes, training, etc. For example, interviewing for a job, good grooming, how to meet the customer, punctuality in work, neatness. These can all be offered even in a small community. The Haxtun program has also been utilizing the services of various businesses in Sterling and Holyoke. *There seems to be little difference in the effectiveness of the training relative to the size of the community.* Exposure to certain jobs is limited even in the larger towns and cities.

3. Similarities and differences between the experimental approach and the existing vocational education programs.

   Discussion: The similarities include on-the-job training or a learning-by-doing type of training. There is a similarity between a number of job attitudes that develop and among some of the resource materials in this area, such as use of the dictionary of occupational titles and various occupational pamphlets. The career selection program may use some of the existing equipment such as where a vocational program is in existence and a student wants welding exploration or other job training available through existing facilities.

   There are also differences. There seems to be a considerable difference in the philosophy of the vocational people who handle the vocational money programs in the State of Colorado. They do not consider any program vocational unless it meets certain time and other standards which have been determined by the State Board for Community Colleges and Occupational Education. The philosophy of the career selection project is that we shall not be limited by standards that prevent the local school from meeting the individual needs of the students. The CSA program seems to be more exploratory, although actual on-the-job training is also a part of the program. There is considerable difference of opinion as to whether vocational programs for high school can or should be *terminal.* The career selection program is not necessarily terminal, whereas the existing vocational programs claim that as their objective. There is more flexibility in the career selection programs. There is no Federal funding of the CSA program. There are fewer reports to make. The program is more flexible to meet local needs.

4. The comparative costs and funding methods of each type of program.

   Discussion: The career selection program has a career selection agent who may or may not be a full-time instructor. The Federal type of vocational program, having as an objective a terminal type of education, becomes considerably more costly to provide.

5. Relative relationships among costs, breadth of program, acceptance by students, and acceptance by the community.

   Discussion: Cost is mentioned above. The breadth of the program is considerably wider in scope than most individual Federal programs because an exploration of the world of work necessarily covers a very broad area. The program seems to be well liked by students and is well accepted by the community. We have experienced very few problems.

6. Comparative breadth of curricular offerings and learning experiences before and after the experimental program.

   Discussion: The career selection program has opened a whole new area in our curriculum. Now we are limited only by our imagination where formerly we were limited by tradition, state regulations, etc.

7. Changes in the type and number of curricular offerings and requirements.

   Discussion: We have added the vocations class to our curriculum. The student may study the world of work and various phases of it through correspondence study. Job exploration and training is now offered in all areas of the school. For example, a student wishing to become a PE instructor or a student wishing to become a guidance counselor might be assigned to the local guidance counselor.

Miscellaneous Observations

Some of the best job experiences have been those provided by the school, with students working under various instructors.

Backgrounds of students make it a challenge to try to help them.

The guidance background of the career selection agent has been a great asset.

Some students are seemingly not finding themselves until their second year of vocations experience.

Grading is somewhat of a problem. Originally we gave letter grades, A, B, C, D, and F; now we have gone to S, S+, and S–. (S=satisfactory)

On-the-job supervision by the career selection agent varies with the students. Some students need little supervision and others should be watched closely–checked at least once a week. For others, once a month may be enough.

We could use more class material. The problem is finding the time to order and develop material.

Workshops and conferences for career selection agents have been good. We need a two-day conference for free talk, just discussing our program.

A list of "do's" and "don'ts" for the CSA's would be helpful.

Some job experiences, such as working in a restaurant, may not be too helpful to the student.

Two students working at one business concern may be too many.

Field trips are excellent. There should be more of them.

By providing a semester unit of classroom work, we hope to gain a larger enrollment in the section dealing with orientation to the world of work.

There should be an understanding with the employer as to the definite time the student will be at his place of business;

if he is absent, then there should be some way of so notifying the CSA.

We are allowing our second-year students to work for pay; however, they must find the job and do their own negotiating for the job.

Any student who has selected an option to work at a job must complete the number of hours required or he does not receive credit.

On-the-job training should be well planned.

Editor's Note by Edwin P. Hildebrand: Haxtun is a shining example of a well thought-out program working effectively. It is a demonstration that people matter as well as the program. Just as a football coach must get at least some credit for his team's victory, so the Career Selection Agent must receive credit for a brilliant performance in preparing the ground for a successful program. A key to this performance is close contact and cooperation with the community. The students trust the Career Selection Agent; so do the adults, with whom he so effectively works. They know that when he comes around to talk about a work experience for a student, he will bring them a student capable of learning to do the job.

One hopes that the labors of the young people are helpful to their employers, but this seems to be the least important part of the motivation of employers. They take them on because the Career Selection Agent, whom they know and trust, tells them it's a good thing for the students. This trust and cooperation represents intelligent use of one of the great resources of the small community–the willingness of adults to help youth.

II B

The report on the Career Selection Education (CSE) program at De Beque High School was written by Mrs. Margaret Lois Marx, the Career Selection Agent (CSA).

A native of Nebraska, Mrs. Marx was a regent's scholar at the University of Nebraska where she took her B.S. in education. She has taken graduate work at the University of Colorado.

Her career as a successful teacher has been testimony to good organizing and hard work. She shares her classroom duties with homemaking responsibilities as the mother of nine children. She is the wife of Leo M. Marx, superintendent of the De Beque School District 49 Jt.

* * * * *

The Setting

The student population of De Beque High School–54 students in grades 7 through 12–consists almost entirely of ranch youth. Only a very small percentage live in the rural community of De Beque, which consists of a general store, a drug store, a service station, and a post office. A remarkably complete and active 4-H program offers the only vocational training in the community with the exception of that offered by the school, which is 30 miles in any direction from a sizable town where job opportunities might exist. No vocational schools above the high school level are available in a vicinity closer than Denver, 225 miles distant on the Eastern Slope.

The school offers vocational training in homemaking, shop (woodworking, mechanics, mechanical drawing), business skills (typing, shorthand, bookkeeping, office practice, business English, business mathematics), art (basic skills, commercial, cartooning), music (vocal, instrumental, classical, folk, pop), journalism, library skills, driver's education, and drama. These courses are a means to an end but cannot be, due to limited facilities and economic situation, a vocational end in themselves.

The basic course work is augmented by an unlimited selection of subjects through programmed materials and an arrangement with the University of Colorado for extension courses at the expense of De Beque School in any subject field desired. They have had students in foreign languages, higher mathematics courses, and science courses (which are offered in a rotation sequence) take advantage of this course-augmenting opportunity. The students find this arrangement quite beneficial in terms of college entrance and/or vocational school preparation. Both vocational and non-vocational courses are sponsored by qualified faculty members.

Since De Beque schools reached complete individualization by the 1967-68 year, it is possible to offer any one student any course of work he desires through the above-mentioned sources and/or teacher-devised materials. De Beque also has at its convenience the Mesa College Continuing Education Courses which are offered as night classes on the college premises 30 miles from school for a minimal fee and high school credit. These are both vocational and non-vocational courses. Even with this added provision, students need instruction, contact, and experience in the world of work as it exists outside of this small community.

In additon to course work, the school secures excellent lecturers, demonstrations, and counselors through various sources such as National School Assemblies, Colorado Guidance Services, local agenices, junior colleges, etc. Competition with other schools in the form of science fairs, spelling contests, speech meets, dramatic contests, music contests, business skills contests, etc., adds a strong motivation to achieve skill in a chosen field and aids in career selection.

The faculty at De Beque feels that the vocational-academic blend surpasses that of most schools of its size and geographic situation. Case studies cited later will show this blending to include not only extroverted youth but also the well-balanced and the extremely introverted youth. To young people who have been in the shelter of rural ranch life but wish to reach beyond what they now have, the school offers an opportunity through this program to achieve any goal ability and interest will allow. Career Selection Education gives them a view of the working world in a scope they have never before envisioned.

The term "community" used herein will be construed to mean De Beque and surrounding areas 30 miles in radius since this area includes the shopping and business towns as well as the career tour areas which are accessible and available to De Beque students.

Sources and Procedures

Career information can be obtained by the students from the school library research materials, County Library Lending Service, and Mesa College Library. All of these libraries are of excellent caliber.

The Career Selection Agent depends greatly on interview sources for down-to-earth source materials concerning careers suitable to this area for those students who want to remain in home territory. Friendly and helpful people among business, professional, ranch, and state employment personnel are not only willing but anxious to supply any information possible.

Since the Western Slope is ranch country, many young people can find training as ranch hands and/or mechanics to "earn while they learn" during summer months. The school has developed an inservice training program which affords students opportunities to assist with physical education, homemaking classes, library work, clerical help, and elementary school work. With their completely individualized system, there is great opportunity for teacher-aide work; *where better could the source of supply be found than in the CSE program?* Science and business laboratory assistants are also needed. The opportunities here for job experimentation are unlimited.

Half-day visitations are made for students with the person or at the place of their choice for purposes of observation, question-asking, and general career orientation in the career they have chosen to research. De Beque has found the half-day visit more satisfactory than a longer period of time; the employers being visited find this less disrupting to their schedules, the faculty finds this more to their liking for the same reason, and the students leave the appointment wanting more rather than being bored by a long time-span.

Evaluation materials used for orientation purposes were given at intervals throughout the year:

Air Force Aptitude Test
Individual Aptitude Profile
PSAT
ACT
SAT
MERIT
GARB
WSSSP Skill Inventory
Dailey Battery
Kuhlman-Anderson
California Mental Maturity
NEDT
WSSSP Occupational Information Inventory
Haller Occupational Aspiration Scale
Haller Educational Aspiration Scale
Department of Labor Interest Check List
Student Vocational Interest Questionnaire
Purdue English Placement–Pre and Post

Research materials available in our school and within reach of the CSE students at all times:

Encyclopedia of Careers and Vocational Guidance Vol. I and II
Occupational Handbook–U. S. Government
Career Monographs–Institute of Research, Chicago
Desk Top Career File–Based on Dictionary of Occupational Titles
ACAC Handbook for College Admission
USBA Directory of Business Schools
NAC Directory for Cosmetology
Careers–U. S. Department of Interior
Off to College–Guidance Research Group, Montgomery, Alabama
Dictionary of Occupational Titles
VIEW Deck and Reader-Printer

Any inadequacies in the De Beque faculty's ability and training in career guidance and exploration assistance are offset by the above-mentioned materials center, imported counseling assistance, and field trips.

De Beque is most fortunate, however, in having faculty members who have performed in the world of work outside in their chosen teaching fields. Of the ten teachers, seven have worked in the field of business in the subject matter which they are now teaching. Therefore, very few inadequacies in world-of-work counseling, practical attitude toward academic-vocational coordination, and "down-to-earth" program guidelines are existent here. This background may also account for the exceptional cooperation of the faculty with the CSA.

In addition to the aforementioned accomplishment of objectives in organizational patterns, use of resources, curriculum content, and appropriate materials, the Individual Progression System allows students freedom of career aptitude and/or interest development through laboratory work where the subject field is appropriate plus flexibility of methodology on the part of the teacher.

An implied objective for the majority of schools would be to blend education for career selection with a continuous progress organization. From this program would emerge a tailored sequence, including open-ended curricula which would be suited to the individual's needs. Hence, for certain students, career selection experiences would be offered in addition to general education; for others, parts of the Career Selection Program would supplement academic work. In many cases the Academic-General Education Program would be modified to blend with and actively apply to career selection experiences.

The Notebook

One way in which the program has met the goals of the project is through innovation of the CSE Notebook–originally the most difficult part of the program to "sell" to the students. The CSE students now constantly use this tool. It has been the source of more work, more "griping," more discontent, more value, and–at long last–more appreciation than any other phase of the program.

The CSE Notebook contains two parts: 1) a small folder which is easy to carry to interviews or to use while filling out application forms for jobs or school, and 2) a large envelope or ringed notebook which contains all other necessary material.

The folder contains high school records, three letters of recommendation, summary of interests and abilities, standardized test scores (which pertain to career information or scholastic ability of use to employers or schools of higher education), past work record, and written materials affecting choice of occupation.

The envelope contains job-finding sources, interview procedures, history of family careers, career research pamphlets, dittoed handouts, write-ups of films viewed, demonstrations, lectures, and all notes on career research. This last category extends through the years and is the basis of the CSE course for those who are in the process of career decision-making.

The CSE Levels

The seventh and eighth grades meet in a group with the CSA once a week for 30 minutes for interest and aptitude evaluation plus guidance and counseling in open-field exploration of career information data. The goal is to find a field of interest in career selection which may be developed in later high school years and to discover interest and abilities of each individual student. Between group meetings, the individual students research any and all career interest fields in a completely unstructured manner—on their own or with voluntarily sought aid of the CSA.

At the second level, ninth and tenth year students meet weekly for 30 minutes for a more pointed interest and aptitude evaluation and to start to assemble their CSE Notebooks. Western States Small Schools Project evaluation instrument findings, career research notes, career family trees, work and hobby histories, measureable aptitude scores, and other such general and basically specific information are collected at this level to form a nucleus of the CSE handbook of the eleventh year.

The third CSE level consists of the eleventh year students. They have a weekly 50-minute block in which they meet as a group with the CSA to supplement the Notebook with PSAT, NEDT, Merit, GATB, and other standardized scores plus further evaluation instruments of ability, aptitude, and interest. The group narrows research to *one* field as soon as possible and makes a career-in-action visit to observe, question, and learn facts of the chosen career as opposed to theory or ideal presented by research materials.

The fourth CSE group meets once a week for a 50-minute block with the CSA for individual or group guidance in further career research (sometimes in an entirely new field), post high school training arrangements, addenda to the CSE Notebook—in the form of letters of recommendation, high school records, more test scores—and other pertinent information. Inservice training within the school (due to the limits in variety of career fields in De Beque) is arranged by the CSA and activated by the faculty with students whenever possible. There now exists a very active CSE inservice training pool from which school personnel may draw as the need arises. The inservice training pool consists of CSE students who have made a definite career choice through research, interview, and evaluation procedures and who have been judged by the CSA as ready to make the first step toward on-the-job training. The faculty members are notified by periodic listings that said students are available at certain times for tasks within their chosen fields. For example, Linda is ready for office secretarial work. The school-employed office secretary finds she is pressed for time and asks Linda to aid her with some filing during the period Linda has listed as available inservice time. Mary (CSE choice, teaching) is called to take over the English class. After a member has had sufficient inservice training within the school system where close supervision is possible, he or she is ready for on-the-job training in the community at large.

Also activated because of interest and inquiry is a Data Processing Conceptual Course for the second semester. Many interested CSE students seem to know almost nothing of what it consists and are able, by visits, to acquire only sketchy knowledge of the concepts. After delving well into the planned course, a visit to an actual data processor may support the student's interest in this career or induce change to a more appropriate career.

The Cooperators

De Beque has an excellent and cooperative counselor, sympathetic with the CSE program, who is affiliated with the Colorado State Employment Agency in Grand Junction where most of our off-campus CSE investigation and work is done. He has been extremely helpful to the CSA and to CSE students. He is constantly on the alert concerning their needs and problems and when possible sends them to the right sources for answers or provides solutions for them within the city. A CSE devotee on the State of Colorado Rehabilitation staff has been of great help in extreme cases where psychological problems based on physical disability stood in the way of the CSE's being of assistance to the student. The Chamber of Commerce and individual business and professional people have been most cooperative in allowing interviews, observations, and on-the-job training on a half-day basis for CSE students. A telephone call or verbal agreement is all that is necessary with these people.

Follow-up

Eight students have completed three years of CSE. Two girls (who seemed to be perfectly channeled) changed course to be near boy-friends; two boys are still undecided even though the CSA has tried very diligently to follow interest and ability lines in procuring research materials and career experiences for them; one was directed by research and understanding of ability limitations to change from nursing (which would have been frustrating to the point of trauma because of low scholastic ability) to secretarial work which involves skills she is able to master; one has strengthened her career choice and limited it to a specialized phase; the remaining two have been channeled through research and inservice training pool into career interests which suit their abilities.

Only a sketchy follow-up study is possible because of the short time lapse. The six seniors of 1967 all went on to career preparation schools as a result of their CSE experiences. Two are at Parks School of Business, one studying to be a legal secretary and the other in general secretarial training; one has enrolled in a welding school; one is in Brigham Young University taking a general course in preparation for specialization in commercial photography; one is enrolled in a pre-veterinarian course at Colorado State University; and one is in a nuclear physics research program at the University of Colorado.

Editor's Note by Edwin P. Hildebrand: The De Beque experience demonstrates that inspired planning can overcome even what might appear such an insurmountable handicap as lack of opportunity for the students to take jobs. The very nature of the area precludes employment possibilities; and those devoted to the concept of learning by doing might be inclined to say that effective learning cannot take place when there cannot be doing. But the Career Selection Agent at De Beque has shown that this is not so—there can be learning, and very effective learning, via the simulation activity of the job observations in Grand Junction. To further compensate for the lack of work experience, the Career Selection Agent has developed what might be termed a scholarly approach to realism about work. The Notebook—that instrument which the students first resent but wind up regarding as a cherished possession—is a brilliant invention. The encouraging, friendly attitude of the libraries, the Employment Service, and the Vocational Rehabilitation Office are no accident; they are the result of effective work by the CSA. In a community where few actual resources exist, inspired and dedicated performance has caused resources to bloom.

SECTION III

REACHING THE YOUNG RURAL CHILD

Mrs. Cloyce Miller, long an enthusiast about teaching in general and about the goals of the Western States Small Schools Project specifically, has written the following paper on Simla's use of upperclassmen in a preschool setting.

Upon graduation from high school, Mrs. Miller attended a business school and then went to work as a stenographer. It was after her marriage that she enrolled at Colorado State University, majoring in home economics education and graduating in 1959 as a bachelor of science with high distinction.

She has taught home economics at Simla since 1960. That, however, does not describe the breadth of school activities for which she is responsible. She has, for instance, in addition to the Family Living class which she inaugurated, also started classes in creative problem solving and a freshman guidance class designed to help students adjust to high school and to each other.

Now entering its fourth year, the preschool program in Big Sandy School District 100J is unique in that it has two co-equal beneficiaries: young children who attend the preschool sessions and twelfth graders enrolled in the Family Living course at Simla High School.

Simla pioneered one of the first preschool programs to be offered under public auspices in a small school in Colorado, predating Head Start programs by several months.

The Simla program and a companion preschool program conducted at Woodlin (both sponsored by the Western States Small Schools Project) had aims similar to the Head Start program they preceded and used some of the same techniques and concepts.

A primary aim was to compensate for the educational ill effects of cultural disadvantage. It is customary to think of disadvantage as primarily affecting poor children (particularly from ethnic minorities) in the urban ghetto. But disadvantage is widespread in the sparsely populated rural areas of Colorado. It springs in part from the low income-low educational attainment level of parents but evolves in very large measure from physical isolation and insulation. The child on an isolated ranch or farm—with his father at work on the land, his mother sharing in the outside work while keeping the house going, his older brothers and sisters off at school—has no one with whom to play or talk. In many homes, there are few playthings or books to read. He gets little chance to talk and listen, little challenge to expand his grasp and sense of what's in the world and how he relates to it. He is often as culturally disadvantaged by "ruralness" as the more widely recognized culturally disadvantaged child of the city slum.

He typically arrives in school at age six to attend first grade. As WSSSP researchers have pointed out, many rural school of Colorado have no kindergarten program; those that do have programs find that no more than half the eligible children attend.

The WSSSP program at Woodlin, though under the preschool project, was actually geared to the kindergarten-age child in a district without kindergarten.

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The Simla Preschoolers

The Simla program aimed at the pre-school group. Of some three dozen children enrolled in the 1965-66 and 1966-67 school years, two were only two years and nine months old at the start of the program but were bright; several were old enough for kindergarten or first grade but, because of their shyness or their state of disadvantage, were deemed better served by preschool; the rest were in the normal 3- and 4-year-old preschool span.

Efforts were made to enroll those who needed the program most, but it must be emphasized that by no means was every child considered educationally handicapped. Of the original 14 children, for instance, pretests conducted on 12 indicated that five had mental ages below their chronological ages; the rest were at or above chronological age.

The Preschool Goals

The formally established goals were:

1. to develop good attitudes toward school, learning, work, and self
2. to develop respect for others and for the work of others
3. to increase activity and imagination
4. to increase conceptual thinking
5. to improve use of the senses and of perception
6. to increase understanding and use of language
7. to increase decision-making ability
8. to increase the attention span
9. to increase eye-hand coordination and to exercise large and small muscles.

Central to many of these goals was the objective to test and identify materials that might compose a preschool kit for use at home with parents.

The Simla Twelfth Graders

The distinguishing characteristic of the Simla preschool program was the close involvement of the twelfth graders, about evenly split between boys and girls, enrolled in the Family Living course. The plan was not only to use them to assist in the preschool program but also—through training for their assignment and in giving them actual contact with very young children—to broaden their general capabilities and (specifically) prepare them for adulthood and parenthood.

Six to eight weeks before the start of the six-week long preschool program in the spring, the students began an intensive child development unit with these objectives:

1. Comprehension that:

   Whether or not to produce children is a personal decision (excepting under religious decree).

   Parenthood is a profession.

   There are individual parental tasks in the childbearing stage of the family life cycle.

Children do not necessarily bring family happiness; and children cause individual lives in the family to change.

There is a universal pattern of human development.

Each child is unique in his rate of development.

Heredity and environment exert heavy influence on the child.

A proper environment must be provided for the child.

Love and security have deep results on the personality of the child; a happy, secure childhood contributes strongly to happy, well-adjusted adult life.

When an individual experiences satisfaction from the results of a particular pattern of behavior, he is likely to incorporate that pattern into his behavior.

A child needs independence.

2. Development of student capability to:

Formulate ways to help children learn to handle their emotions.

Understand the structure of preschool.

Discuss organization and management problems of the preschool and the students' role therein.

Construct learning materials for preschool.

This intensive period of pretraining of seniors in the preschool laboratory was aimed at these broad goals:

1. To develop good attitudes toward young children.
2. To apply child development theory to actual situations; to help the preschooler feel secure by providing a calm, unhurried atmosphere in which he is accepted, independent and successful; to provide appropriate learning experiences for preschool children.

THE 1965-66 PROGRAM

Meeting the Twelfth Grade Goals

The pre-training was judged quite successful. The student response was of high quality.

There were disappointments in the preschool program itself. For instance, detailed observation sheets had been prepared for the students to fill in on the assumption that this would be a great learning experience. It was, for those who turned them in—but these were for the most part the best motivated and brightest students. Others didn't—but their omission undoubtedly was caused in part by the complexity of the sheets and in part by an organizational failure at the school: scheduling problems forced the cancellation of several sessions at which there was to have been evaluative discussion of the preschool experience as well as clarification of the sheets. Examples of the detailed observation sheets are included in this report.

The students sometimes obviously felt insecure concerning their role in the preschool.

The seniors participated with the teacher in several evaluative sessions after the last session of the six-week preschool program. These were among their more pertinent observations:

1. Generally speaking, very profitable.
2. Observe for one day all of one child's activities, words, etc.—analyze in terms of creativity, basic emotional needs, ability to relate to his age and adults.
3. They suggested having one long observation each week instead of one short one each day, so if an evaluative trouble-shooting session were missed, it would not be so difficult.
4. More reinforcement of child development theory on discussion day.
5. No "busy work" on equipment.
6. Have same number of preschoolers as twelfth graders, each twelfth grader being responsible for one child without being tied to him constantly and thus to work on the child's learning experience more casually. (The students believed they would feel more accomplishment.) Get parental cooperation on regular attendance.
7. The preschoolers did not profit, generally speaking, as much as the twelfth graders wanted them to.
8. Little creativity was shown by the preschoolers.
9. Science should be structured so all children would come.
10. Music should be less structured and more creative.
11. Have parents only come the first day and conduct an orientation period.

Meeting the Preschool Goals

A variety of materials and equipment were used in an effort to meet some of the goals set:

Category plates (three or four flowers making up the flower plate, three or four vegetables on the vegetable plate, etc.).

Books (when a child asked to be read to, a good selection of books was available.)

Cuisenaire rods (detailed program for use appended).

Electric typewriter (detailed program for use appended).

Dot-counting cards (card with number of dots matches card showing the numeral).

Texture box (in which to find matching object by sense of touch alone).

Puzzles (jigsaw in type, ranging from 4 to 50 pieces).

Shape pot (in which to feel the shape of an opening and to insert the appropriate block).

Variety of indoor equipment, including

- Peg boards
- Hasbro tiles
- Beads to string
- Lacing cards
- Pounding board
- Look board (made by twelfth graders)
- Geometric blocks and pot
- Blocks

Variety of outdoor equipment, custom designed and built from Western States Small Schools Project Funds, including

- Rocking boat
- Driving board
- Teeter-totter
- Climbing apparatus and ladder.

These materials were not just brought into the preschool situation and left lying around for haphazard use; detailed and sequential training was given to the twelfth graders to use these materials for developing interest and competence on the part of the preschoolers. The programs for use of the Cuisenaire rods and the electric typewriter illustrate the detail involved.

PRESCHOOL OBSERVATION
SHEET #1 - Family Living
LOG ANALYSIS OF ONE CHILD

Name _____

Keep a minute-by-minute record of an assigned child's activities, words, actions, results, failures, etc., for one hour's time <u>inside</u> the preschool.

The record must contain <u>facts</u> only - not opinions. For example:

<u>THIS</u>:

1:30 - Arrived with mother, removed coat, entered home economics room and stood just inside door.

1:33 - Gene said, "Hi. What would you like to play with?" Mary said nothing. Gene taken by hand to peg board.

1:37 - She filled the entire peg board with red pegs, working always from right to left, removed them one by one in the same way, then put the peg board and pegs on the table.

1:50 - John pushed Mary. Mary backed two steps without saying anything, looking at the floor.

<u>NOT THIS</u>:

1:30 - Arrived and stood shyly inside door.

1:33 - Seemed shy when Gene greeted.

1:37 - Efficiently filled the peg board with red pegs.

1:50 - John pushed her. She seemed to withdraw.

After this log-record is completed below, you will analyze it according to the following pages. (Keep your log below, please. Add other sheets as necessary.)

_____

NAME OF CHILD

ANALYSIS: _____

NAME OF CHILD

I. Evidences of basic love need _____

Being met Not being met

Conclusion:

II. Evidences of basic independence need _____

Being met Not being met

Conclusion:

III. Evidence of basic success need _____

Being met Not being met

Conclusion:

IV. Evidence of creative ability _____

Ability Lack of ability

Conclusion:

V. Evidence of ability to _____

Relate appropriately to adults Not relate appropriately to adults

Conclusion:

VI. Evidence of ability to _____

Relate appropriately to age mates Not relate appropriately to age mates

Conclusion:

[Note: Four other sheets probed other kinds of observations and conclusions by the 12th graders.]

REMOTE CONTROLLED TYPEWRITER PROGRAM

Goals: Perception of various forms.
Discovery of relationships of sounds to symbols.
Feeling of success.

General directions to the twelfth grader as he works with the preschooler:

Once each day ask the child if he would like to work with the typewriter. If he says "no," do not force him to work. If he says "yes," take him to the remote controlled typewriter to work. The time limit to work is ———— minutes. He may stop working any time he wishes to do so—or if the child is abusive in any way, simply say "your time is up" and escort him from the booth. NOTE: Continuously hitting the return or a single key, etc., is not considered abusive. (Be sure and set the time clock for the time limit before beginning.)

PHASE I (Tape cover I on the typewriter.)

1. As the child strikes a key, name the symbols as he strikes them, such as "L," "O," "Y," "I," "comma," "space," and "return." If the child hits more than one key at a time, turn the machine off, saying "hit one key at a time." If he continues to be abusive, simply say "your time is up" matter-of-factly, and leave the booth. When the child appears to become bored or begins naming the symbols before you do, you are ready for Phase II.

PHASE II

1. Present the child with one symbol card from the group and say the symbol name, i.e., "Upper Case T." Turn the typewriter off until the child is in position to type the correct symbol. When the child can do this correctly, continue to Group 2, which is the lower case of the same letters, and repeat Phases I and II with the lower case letters.

PHASE III

1. On the blackboard, write the upper case letters just used on one line and the lower case (in a different order) on a different line. Say "Draw a line from upper case O to lower case O." If he does this correctly, go on to another letter; if he does this incorrectly, simply say matter-of-factly, "Draw a line from upper case O to lower case O." When the child can do this correctly, you are ready to put on the next cover and begin with Phase I with a new group of letters. Continue the above phases until all the letter groups and above phases have been completed. You are then ready for Phase IV.

Group I	LOTI
Group II	BGJEF
Group III	CDQPA
Group IV	VWXZK
Group V	HMNRUYS

PHASE IV

1. Say to the child, "What word would you like to type?" Print the word in upper and/or lower case letters as appropriate and allow the child to type the word, turning off the power until he is in proper position. Have him then type the word without seeing it, turning off the power until he is in proper position. Continue the above until the time is up.
2. The next day, show the child his words and ask him the word names. If he can recognize the word, put it in his file saying "This is one of your words." If he cannot recognize the word, put it in the wastebasket saying "We only want to keep *our* words in the file." After he has gone through his words, continue on to new words.

PHASE V

1. After the child has several words of his own that he recognizes, ask him "Would you like to tell me a story with your words?" As he tells the story (it will be a few phrases or sentences) record it on a tape and let him transcribe his story by typing. Then ask him if he would like to read the story to you. Keep the story in the child's file and let him read it to you the next day.
2. Continue above, letting the child do things such as read his story to a group of children or some other adult, etc.

CUISENAIRE RODS

Name of Child _____

Age of Child _____

The Cuisenaire rods are (1) a perceptional device, (2) a color concept device, (3) a math concept device. Work with the child each day. Proceed from step to step with the child, encouraging his progress but not pushing him to the point where he consistently feels unsuccessful. Praise his successes and correct his failures in a way that does not squelch him. Example: you ask for a red rod. He hands you a green one. Don't say "That's not right." Do say "That's the green rod, this is the red rod" in a pleasant, matter-of-fact manner. Some children will not go beyond step one the entire preschool period. Some children will complete all the phases.

1 - White 2 - Red 3 - Light Green 4 - Violet 5 - Yellow
6 - Dark Green 7 - Black 8 - Brown 9 - Blue 10 - Orange

	Date	Result
1. Have only one rod of each color. Ask for each color by name, i.e., "Hand me the red colored rod." If they give you the wrong one, say "That is the _____ colored rod - this is the red colored rod." Give praise when they succeed. Do the colors in the order listed below. If the child obviously is not succeeding, take the first color missed and walk about the room, finding things this color. Work each day on this color until he knows it, then proceed. Another technique to help the child is to put one unknown color in with some known colors and ask for the unknown one. By the process of elimination, he usually can get it; then praise him! Red, blue, yellow, light green, orange, black, brown, violet, white		
2. Have only one rod of each color. Have the child name all colors.	Date	Result

3. Have varying numbers of each color (no more than five of a color). Have them count how many of each color there is. Record highest number they can count to meaningfully. NOTE: Some children count well but without meaning. Have them move the rods to a different pile as they count.	Date	Result
4. Group quantities - have ten in at least one group - have name quantity and color in each group.	Date	Result
5. Have look at size and color, then put behind back (or in bag) the natural, yellow and orange - have bring out each specific color by feel only.	Date	Result
6. Repeat above, adding black and light green.	Date	Result
7. Repeat above, adding red and blue.	Date	Result
8. Repeat above, adding dark green, purple.	Date	Result
9. Repeat above, adding brown.	Date	Result
10. Have make staircase beginning with smallest.	Date	Result
11. Have shut eyes and name colors, going up from white - do backwards.	Date	Result

12. Assign new names - if white one is one, what is red, etc.	Date	Result
13. How many white ones in the yellow rod? What is another name for the yellow rod? Orange Red Black Light green Brown Purple Dark green Blue White	Date	Result
14. Put two rods together. Find equivalent rod. Make several combinations of equivalent rods.	Date	Result
15. Repeat above, using other combinations (list one combination below).	Date	Result
16. Lay a ten rod by each rod, starting with white, and name what each equals (11, 12, etc.). (Put progress in comment column.)	Date	Result
17. Work with the equivalent of twenty-seven many different ways. (List ways.)	Date	Result

The teacher conclusions on reaching the goals are as follows.

Goals 1 and 2: To develop good attitudes toward school, learning, work and self; to develop respect for others and for the work of others.

Generally, these goals were reached fairly well, although they are resistant to objective measurement. Many mothers talked about how much their preschoolers enjoyed school and how disappointed they were on days when there was no preschool. Unfortunately, shyness problems were not surmounted for three children who would not stay without their mothers.

Goal 3: To increase activity and imagination.

This goal was encouraged largely through music and art. Unfortunately, the twelfth graders failed to plan an activity which was their responsibility, with the result that little imagination was shown.

Goal 4: To increase conceptual thinking.

The Cuisenaire rods were found very good for this purpose; the electric typewriter generally good; category plates poor—probably as a result of skimpy preparation by the twelfth graders. The value of books remained undetermined, as did the value of dot-counting cards. Science presentations were eagerly anticipated by the preschoolers, but again, there was often skimpy preparation by the students.

Goal 5: To improve use of the senses and of perception.

Cuisenaire rods proved excellent, as did puzzles. The texture box and the shape pot were good.

Goal 6: To increase understanding and use of language.

Music and science were good in promoting this goal; books were probably good, though this was difficult to measure.

Goal 7: To increase decision-making ability.

This goal resisted measurement totally but should be kept as an objective.

Goal 8: To increase the attention span.

The attention to decision-making, and therefore to unstructured situations, meant there was no structured attempt to keep a child engaged at an activity beyond his own desire. Many children spent quite long periods of time engaged in activities which interested them. It was concluded that this is not a realistic goal because of the focus of the program.

Goal 9: To increase eye-hand coordination and to exercise large and small muscles.

Many materials and much equipment, some standard in preschools and some specially designed and built with WSSSP funds, were used successfully in attaining this goal.

Although some useful materials were found, the central objective of developing a kit of materials for use in the home was not realized.

THE 1966-67 PROGRAM

As a result of the first year's experience, some changes were made in the 1966-67 program which met three hours a day, three days a week for six weeks, with 20 children ranging in age from two to six. These were the changes:

1. Attention Span

The goal of increasing the attention span of preschoolers was dropped.

2. Preparation by Twelfth Graders

Efforts were made to improve the creative experiences, particularly in music, art and science, which had been disappointing because of poor preparation. To insure high quality lessons and activities, each twelfth grader was assigned a science, a music, and an art lesson and/or activity to plan and prepare *prior to the time preschool began.* Each plan included:

a. project for day
b. goal--what the preschooler should be able to do after the presentation
c. content—what to do or say to present the lesson
d. evaluation—how to tell whether he reached his goal
e. list of materials needed.

The twelfth graders were to work particularly toward the goal of creativity. In light of the deficient results of the first session, the achievements were most gratifying (according to the writer's opinion) and include the following actual examples of topics, concepts, and activities participated in by the preschoolers:

Science

Heat makes popcorn pop
Teeth size of animals is related to size of animal
Identifying three fruits through taste only
Pineapple in its various forms
Names of baby animals
Air moves
A light source is required to make shadows
Flower parts
Growing seeds
Ants build homes, bury their dead, drink water and eat food
Zoo animal identification
Vegetables

Music

Rhythm band
Creative story-telling
Puppets
Finger plays
Interpretive dancing
Instrument identification through sound
Making up songs,

Art

Experimentation in mixing colors, using eye dropper and food color
Spot painting
Fingerpainting
Clay
Crayons and paper
Collages
Crayon etching
Silk screen paint

Although involving a great deal of planning and preparation by the students, this method of working with the preschoolers will definitely be continued as a worthwile activity for both twelfth graders and preschoolers.

There was, generally speaking, a wide variety of high quality activities. The children enjoyed the science and art particularly. The music continued to be a problem spot—primarily because the twelfth graders were themselves inhibited, indicating they need further work on creativity prior to working with the children.

3. Assignment of children and twelfth graders on a one-to-one basis.

This suggestion by twelfth graders in the 1965-66 session was originally not amenable to the 1966-67 group. The 1966-67 group also wanted to take more children than the instructor originally intended to include in the program. Upon taking a second look at the situation, it is now felt that the original suggestions should be followed because with twenty children we had problems with facilities, materials, and maintenance. The next session will be on a one-to-one ratio (though not all twelfth

graders will be present at any one time), which should enhance the learnings of both groups involved.

4. **Refinements in observation sheets and theory discussions.**

The observation sheets were gone over in detail prior to observation in preschool; examples were given to enable the students to observe competently and to reinforce child development theory. The results were better than the previous year, but further work must be done in this area before the desired effectiveness will be obtained.

A new observation sheet involving the activities of one child for one day and analysis thereof was tried as suggested. It was extremely frustrating for the twelfth graders and not altogether successful. If use is continued, the sheet will have to be refined.

5. **Evaluation of twelfth graders during the preschool session.**

The evaluation system instituted the last two weeks of the previous preschool was continued. This helped the students be aware of their progress and role in the preschool.

6. **Deletion of learning materials.**

Category plates and counting dots were discontinued until further refinement of the programs and instructions for use can be developed.

7. **Addition of learning materials.**

Additional learning materials used in the program and evaluated are listed below:

Sculptured family members
Musical instruments
Counting bar
Magnetic alphabet board and letters
Rubber counting animals
Lotto games
Ant farm
Magnifying glasses
Incubator
Puzzles in category groups
Perception plaques
Work benches
Tree-bird balancing puzzles
Montessori cylinder set
Lego blocks
Montessori metal insets
Dressing frames
Lincoln Logs
Tire trampolines

Twelfth Graders' Suggestions

At the conclusion of the preschool, the students made a number of suggestions for improvement, as had their predecessors. Among the most pertinent:

1. **Refine observation sheets**

Specific suggestions to make the observations more meaningful were carried out.

2. **Have two hours only, instead of three**

The children were tired and cross by the end of the afternoon and so were the twelfth graders. Next year the preschool will definitely be for two hours only!

3. **Have children assigned on a one-to-one basis**

This suggestion by the first session of students was not followed. This will arbitrarity be done in the next session without consulting the twelfth graders involved.

4. **Have the music more structured the first few weeks by dividing the children according to age and having them all go at once rather than drifting over as individuals**

Some activites threatening to individuals would not be so for a group. This suggestion will be followed–at least for the first few weeks until the children become used to what the music area is for.

5. **Do not record grades of students the first week of preschool**

The first week the instructor should not record grades but should be extremely critical in the evaluation of each twelfth grader, assisting them in learning their roles more quickly and adequately and identifying any lack in their comprehension of child development theory.

6. **Have the children take the responsibility for putting the learning materials away before they get something else out**

In this way, the maintenance problem will not be so difficult and the responsibility could well be a worthwhile goal for the preschoolers.

7. **Try to solve the storage problem by having a specific place to put learning materials**

One or two long planks placed on cinder blocks for shelves would permit the work materials to be left out each day and are low enough for the children to reach. They would no longer have to be stored at the end of each period.

Many of these suggestions were incorporated in plans for the 1967-68 session. Evaluation is still going forward and will serve to produce modifications in the 1968-69 program.

Future Aims

There are three broad objectives for future programs

1. **Statement of all objectives as behavioral objectives and formulation of definite criteria for accomplishment at both the preschool level and family living class level.**

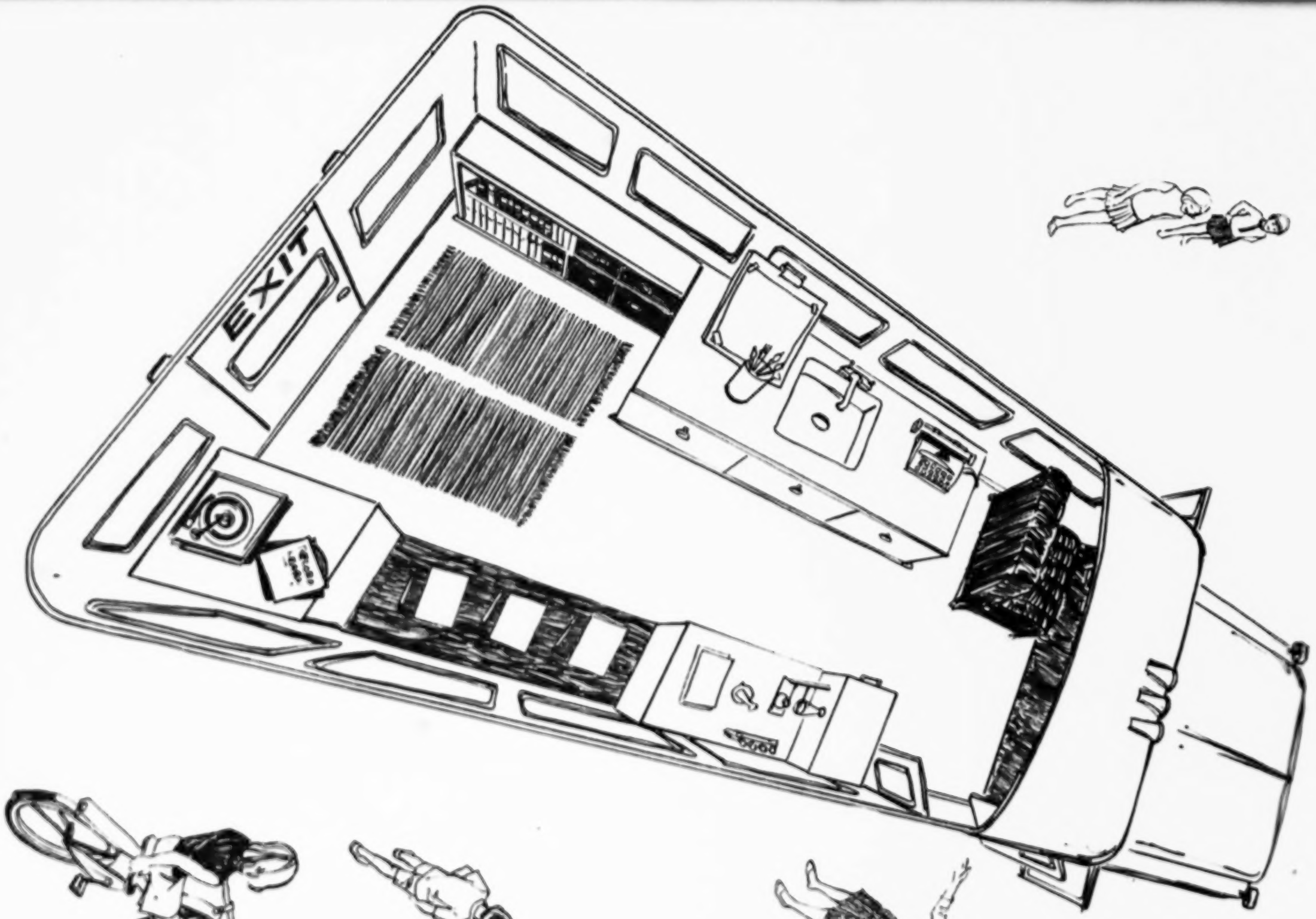
For example, the goal of creativity would be examined and definite guides would be set up for determining a child's progress toward this goal in terms of observable behavior.

2. **Expansion of the preschool into a full-time preschool manned primarily by twelfth graders trained in the Family Living class.**

In implementing this program, there would be no preschool for the first nine weeks of the school year. The family living class would, during this time, undergo extensive training in child development theory. The preschoolers would then be brought into the situation. The preschoolers' learning experiences would be under the direction of a preschool teacher, with the family living teacher cooperating. The family living students' learning experiences would be under the direction of the family living teacher, with the preschool teacher cooperating. The resulting scheduling problem might best be solved by modular scheduling.

3. **Designing of and implementation of a mobile preschool unit so extremely isolated rural children could be reached.**

As originally planned by WSSSP, a converted bus was to be the mobile home of rural preschool programs. The plan was for the teacher-driver to pick up three or four children, park in a designated area, conduct the preschool session, then drive the children home again. This would avoid the penalty of great distance incurred in rural areas and would, at the same time, reduce the danger of driving in the sudden storms common in the Simla area.


EXIT

As originally conceived, the floor of the second-hand bus to be procured for this purpose would be carpeted so there would be no need for chairs. A flat surface would be available to put on the floor for such activities as painting. The middle area of the bus would be left free for a creative area; high up along the sides would be storage for learning materials. A non-detailed preliminary plan for such a mobile preschool is given here.

A mobile preschool should prove uniquely suited to rural conditions. It remains a priority item.

Editor's Note by Edwin P. Hildebrand: The preschool program at Simla has been a distinct success–more of a success, perhaps, than indicated in the report of the highly objective and self-critical person responsible. It has very clearly made a difference for the young children involved, although, as Mrs. Miller correctly observes, this is difficult to prove in objective terms. What must not be overlooked, however, is the great impact it has had on the twelfth graders involved. They have indeed learned something valuable to adulthood. But there has been even a more dramatic effect: some students with problems of adjustment obtained valuable insights in their work with shy preschoolers–insights which made them more capable of adjustment and which might be characterized as promoting personality changes. Mrs. Miller's success in making these students, particularly the boys, comfortable in dealing with such small children is an extraordinary achievement.

Other aspects of this program ought not be overlooked. Here was a situation in which a teacher thought preschool was needed; analyzed her own community and concluded that a preschool per se might not win support but that a preschool related to the development of twelfth grade pupils might win support; developed a program on this basis and "sold" it. It is a lesson in practical accomplishment of results. It is also a lesson in the value of such an organization as WSSSP. The Colorado portion of WSSSP had some funds with which to assist. But even more important, it had the prestige essential to rallying support in the community behind the program.

The Simla program has been so successful that it would be desirable to make it a year-round program rather than one for several weeks. However, it appears that for the present, preschools cannot be developed in the small rural schools principally through use of local resources. Preschool programs in rural areas, because of the low financial base, may require a large percentage of State support. The Simla program demonstrates that such a project is worthy of both the local district and the State's enthusiastic efforts.

SECTION IV
THE INDIVIDUAL AS LEARNER

From the particular to the general . . . from theory to practice . . . from philosophy to classroom management.

These are the focal points in the following group of papers of which the common theme is a confrontation of the question: "What is individualized instruction?"—and the important secondary question: "Why is individualized instruction of importance to any teacher and any learner, and in particular to those in small schools?"

The Fischers, Louis and Barbara, get at the question from what is essentially a practical view. Writing with superb clarity in a field in which they are among the pioneers, they point out that children are really different: not only in the usual cliche form, but in the style by which they approach the business of learning. The Fischers suggest that there are many learning styles and describe ten kinds of learners. Crossing the obvious bridge, they describe a half dozen styles of teaching. They suggest that learning and teaching styles interact of necessity and that the interaction can be channeled to "a clear goal of the entire process of learning," making the student an autonomous learner.

Robert King, writing more as a distiller of the thoughts and experiences of the Meeker professional staff than as an individual, accepts the Fischer goal of the autonomous learner. He defines the teacher's aim as being "to make herself unnecessary to the student." He examines in what specific ways the teacher is necessary to the student and to the learning process. Though it might on the surface appear to downgrade the teacher to say that most of the processes in the learning situation can be performed by others or by others in partnership with the teacher, a concise reading will make it crystal clear that Mr. King and the Meeker staff project an important central role for which the truly professional teacher must yearn.

Another view of the teacher's role is taken by Charles Jaquette. He discusses the teacher interacting in three situations: the large group, the small discussion group, and the individual or laboratory activity. He says to the teacher, "Here are three situations and what you are trying to achieve with each. How do you behave in order to reach your goals?" A superb teacher himself, his conclusions deserve attention.

Finally, John Meier tries to get at the basic question of *how* (or why) people learn. In a paper that is a masterpiece of condensation of exotic fields—and entertaining at the same time—he ponders on behavioristic theory and cognitive field theory. In summary, he says behaviorism defines learning in terms of measurable change in behavior and cognitive field theory defines learning as a change in either behavior or perception (which may not be measurable).

And what does this have to do with the teacher in a small school organized for continuous progress of students? Very much, he contends; for (returning to the ground plowed by the Fischers) each student is an individual, and to reach and teach him as an individual, the teacher had better understand what makes him "tick."

IV A
LEARNING STYLES, TEACHING STYLES, AND INDIVIDUALIZED INSTRUCTION

IDENTIFICATION OF STUDENTS' LEARNING STYLES NEEDED TO SUCCEED IN A CONTINUOUS PROGRESS ORGANIZATION

by Louis Fischer and Barbara Bree Fischer

Everybody loves a bonus—and the Western States Small Schools Project got a particularly valuable bonus in its relationship with the Fischers of California.

Mrs. Fischer is an official consultant to the project; she has proved informed, stimulating, and inspiring in several years of consultancy. Louis Fischer is not an official consultant, but he is Barbara Fischer's husband—and husbands and wives do talk things over. As a result, the Project has benefited from some of the most incisive and pioneering thinking going on in education in the United States.

Mrs. Fischer is now on leave from the University Elementary School of the University of California at Los Angeles where she has been teacher, team leader, intern supervisor, and coordinator of visitation and demonstration. She formerly taught in other California schools and at San Francisco State College. She has both her bachelor and her master degrees from Stanford University; she is currently a doctoral candidate at UCLA.

Mr. Fischer has four degrees from Stanford: bachelor, law, master, and Ph.D. He has taught in public schools and at a number of colleges and universities. Now professor of education at San Fernando State College, he has in recent years also been a distinguished lecturer at the University of Alberta and at the University of Hawaii.

Both Fischers have published widely and are in much demand as consultants.

* * * * *

School organization, which has the continuous progress of each learner as its key objective, calls for a reexamination and alteration of many traditional ideas. High among the notions to be examined and discarded are the age-old belief that all good students learn the same way and the companion belief that there is one style of good teaching.

For many centuries people have recognized the fact that not all students learned a certain body of knowledge even though the

teacher or mentor was acknowledged to be a good one. A rather primitive explanation offered for this fact was the idea that some children are educable (or teachable) and others are not. We might note here that this purported explanation explains nothing. It merely makes the teacher feel better–and, having rationalized his lack of success with some of the students, he may continue teaching as before without feelings of guilt. One important contribution made by the United States of America to the rest of the world was a commitment to the idea that all children are educable and must be schooled.

The foregoing belief is an ideal; the willingness to pay the cost leads to many consequences. If we must take into our classrooms all the children of all the people, and if we cannot dismiss some because we label them "unteachable," we must find ways of teaching them. Efforts to teach those heretofore labelled "unteachable" lead to careful, systematic reexamination of most of our ideas about how people learn as well as how teachers teach. A relatively recent development in this exploration focuses on the learning styles of children and youth as well as on the teaching styles of teachers.

The *ideal* of a continuous progress organization would be to so arrange the total school environment, with a special focus on learning and teaching styles, as to insure optimal learning of all students as well as optimal utilization of teaching talent. Some explanation is in order to clarify the meaning of "continuous progress." As we use it here, the concept does not mean that each student proceeds step by step through an organized body of knowledge or through step-by-step acquisition of skills in reading, writing, arithmetic, or any other so-called "skill" subject. In "continuous progress" we are concerned for the total growth of the learner; namely, his intellectual, social, emotional, moral, and aesthetic development. Furthermore, we are crucially interested in his development toward the goal of "learner autonomy."

Toward Learner Autonomy

Learner autonomy is at times misleadingly expressed as "learning to learn." This is misleading or erroneous, for it is possible that a student had learned to learn and still is not autonomous in learning. As a sobering example, we can point to millions of successful students–including elementary, secondary, and college students–who perform easily and efficiently in highly structured, teacher-directed programs of study. These same students tend to struggle, be uncomfortable, or often be intellectually paralyzed in an open-ended problem-centered learning situation. They have not developed autonomy in learning; in other words, they have not learned to propose objectives (and support them as worthwhile), to explore means and methods for the achievement of these objectives (including the utilization of teachers, books, and other resources as relevant), and to evaluate how well the stated objectives were achieved.

To illustrate the foregoing, it should be clear that a student has not achieved autonomy in learning just because he spends long periods of time working alone with a set of materials, be it a program, a filmstrip, a book, or teacher-made dittoed sheets. He may simply enjoy the feeling of accomplishment gained from such work; he may enjoy pleasing the teacher; he may be merely obedient rather than autonomous. Hard work by itself, whether done alone or with others is not *per se* evidence for or against learner autonomy. Too many teachers point with pride to their hard working students who are merely conforming, obedient, or trying to get good report cards.

The autonomous learner shares in the creation of his learning goals. It should be noted that this idea is not the same as a child-centered approach to learning, for the teacher has a major role to play in creating and criticizing the goals and the means to reach them. The responsibility is on the teacher by virtue of his professional competence as well as his superior fund of experience. With the help or guidance of the professional adult, the learner should become increasingly independent and self-directive in all areas of learning. In a sense, the teacher becomes increasingly dispensable in the long run. However, considering the complexities of our ever-expanding and ever-exploding fields of knowledge, a competent teacher will continue to be challenged to guide his students on to ever higher levels of learning, of understanding, and of inquiry. The key characteristic of the learner autonomy is the increasing involvement and competence of students in the selection and execution of the ends and means of their own education.

It is readily admitted that learner autonomy thus conceived is a very ambitious goal and that perhaps most adults fall short of its full realization. This admission, however, does not reduce its value. It should make us realize that the goal of learner autonomy is an ideal to work toward, and that different learners will succeed in their progress toward this goal in different degrees. It is suggested that the teacher should be constantly helping each learner develop toward autonomy in learning as well as helping each student to value this goal. The reverse side of the coin of autonomy is continued dependence upon the teacher or a structure built into a set of materials. As conceived herein, a continuous progress organization which produces dependent learners is self-defeating; thus in *substance* it is not a continuous progress organization regardless of what its *form* might be.

LEARNING STYLES

A relatively recent concept which emerged out of the experience and discussions of knowledgeable teachers is the idea that there are different, identifiable ways in which students *approach* learning. "Learning style" is a useful term to explore this complicated phenomenon. At this point in the evolution of the art and science of teaching, there is insufficient research either to completely define or to predict and document the significance of learning style and its consequences in education. The ideas which follow, however, are based on carefully observed and analyzed experience; as such, they reflect the judgments and professional opinions of sensitive and competent teachers. "... If more than lip service is to be given to the concept of individual differences, we must begin to explore ways of identifying which children learn best by which approaches. To this point, research has not addressed itself to any great extent."[1] Hopefully, educational research workers will explore this area in the future and–to the extent that their tools will allow it–come forth with more rigorous descriptions and interpretations. Lacking such research, education still must proceed. The comments which follow are offered, with some confidence in their potential usefulness, to fellow educators in the spirit of exploration.

It should be noted at this point that there aren't one, two, or three learning styles needed for success in a continuous progress organization. Such an organization, if well conceived and executed, has room within it for a variety of styles. While the long-range goal is development toward autonomy in learning,

[1] Samuel Weintraub, "A Critique of Review of Phonic Studies," Elementary School Journal, LXVII (October 1966), 39.

various learning styles can be capitalized upon in the efforts to move toward this goal. We hope to make it clear that some learning styles may have to be altered, some may have to be eliminated, and some should be encouraged, but there should be room for learners with any and all styles if the organization is genuinely geared at continuous progress.

Let us look at some of the identifiable learning styles found in classrooms.

The Incremental Learner

This student proceeds in a step-by-step fashion, systematically adding bits and pieces together to gain larger understandings. An analogy to bricklaying is appropriate with larger structures emerging from the careful and at times tedious adding of piece upon piece. There are students who apply this style in mathematics, reading, history, and in every other curricular area. Perhaps this type of learner benefits most from contemporary programmed materials.

Examples:

In teaching about place value or bases in mathematics, some children need to learn several bases in addition to the base ten with which they are familiar. They might have to learn base five, base eight, or base nine before they begin to understand the principle of place value. They seem to go from the parts of a principle to the whole of it.

While learning about a particular concept in geography, related to map reading for example, this type of learner must first gather many related facts before arriving at a generalization. He might need to know the temperature, the elevation, and the longitude, latitude, and location of mountains before he would be willing to offer a generalization about the kind of climate a particular place would have. He must gather all this information in order to comprehend the concept–to "see the big picture."

The Intuitive Learner

This student's learning style does not follow traditional logic, chronology, or a step-by-step sequence. There are leaps in various directions, sudden insights, meaningful and accurate generalizations derived from an unsystematic gathering of information and experience. The quality of his thinking generally exceeds his verbal ability to describe the steps by which his conclusions are reached. It is easier to describe from the hindsight point of view how he learned some concept than to predict in advance the steps by which he will learn.

Example:

A learner can jump to a generalization from brief examples of explanations. Work with base five in contrast to the familiar base ten is often enough for him to understand the basic principles and apply them to other bases.

In contrast to the map work of the incremental learner, the intuitive type will try to generalize from fewer elements and from sparse guidelines–skipping steps in the cognitive chain. Consequently, he tends to make more wild guesses and errors. He works faster, but he must learn to retrace his thinking and establish evidence for his conclusions.

The Sensory Specialist

This student relies primarily on one sense for the meaningful formation of ideas. While his other senses are intact and functioning, one tends to predominate. Among these learners, the most commonly identifiable styles are the visual and the auditory learners. As the labels imply, the visual learner gains much more from seeing or reading about the phenomenon to be learned, while the auditory learner craves for oral explanations, recordings, or lectures. In the past, not fully cognizant of these differences, many teachers have used multisensory methods which, in shotgun fashion, reached many of the students. The shotgun method is not particularly efficient and carries the implicit danger of boredom due to repetition and because the particular "sensory specialty" is but a small segment of the presentation.

The sensory specialist style of learning has been recognized by various educators. Russell and Fea, for example, state that: "Children are visually, auditorily, or kinesthetically oriented concerning ability to learn. Perhaps teachers need diagnostic devices to determine which avenue of learning is the best for an individual child, so that a clear, definite, unified pattern of a symbol is possible for that child."[2]

Examples:

Howard would view a film or filmstrip on Indian village life. He would gain much from these experiences and use them later in class discussions, writing, and in art work. By contrast, he seemed to gain very little from reading or oral presentations on the same subjects.

Sheri, when studying her spelling, looks at the word carefully, then shuts her eyes to visualize it. This is a successful method for her in learning to spell. By contrast, Steven must write the word at least eight times and seems to learn to spell kinesthetically. Keven must spell the word aloud because he learns how to spell orally.

The Sensory Generalist

This student uses all or many of his senses in gathering information and gaining insights. He will rely on sight, sound, touch, smell, and any other relevant sense to gather ideas and to test them against his prior knowledge as well as against the data his various senses provide.

Related to the sensory generalist is the oversensitive learner. This oversensitivity is not used in the psychological sense but refers to the learner who constantly has all of his "antenna" out to receive sensory stimuli from all sources. Unless he is helped to block out some stimuli, he is unable to make use of those most relevant to desired learnings. This type of learner may have to function in a setting where some sensory deprivation is purposely arranged. Students can often be helped to develop or "beef up" certain sensitivities over others.

There are children who, when working on special projects, choose to work away from others in a less stimulating environment. A simple three-sided cardboard screen, like a study carrel, can be used for parts of the day to shield such students from the complexity of the environment.

Example:

While most students learn with the aid of all of their senses, some examples of oversensitive learners are needed.

There is the case of Charlie who, in order to focus on his basic number facts, must be partially isolated from his peers. He is so keenly aware of sights, sounds, and even smells in his environment that his awareness interferes with his focusing on a task. Judy was significantly helped by her teacher when she moved from a central location in the classroom so that she would not be surrounded on all sides by stimulating movement and color.

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2 David H. Russell and Henry R. Fea, "Research on Teaching Reading," N. L. Gage (Ed), Handbook of Research on Teaching, Chicago: Rand-McNally and Company, 1963, p. 882.

The Emotionally Involved

There are students who function best in a classroom in which the atmosphere carries a high emotional charge. At least two types of such classrooms can be identified. The first one provides the emotional color and vividness of a learning atmosphere through the teacher's use of poetry, drama, lively descriptions, and his own obvious enjoyment and involvement in the substance of learning. The second type of emotionally involving classroom is one in which the teacher and students carry on active, open discussions wherein disagreements are common. Strong positions are stated, defended, adopted or discarded after dynamic interplay of ideas and activities; the teacher is an active participant in the process. In both such classrooms, the emotional tone is easily visible or perceivable to the observer, although the former tends to focus on the subject matter while the latter tends to focus on interpersonal relationships or disagreements.

Examples:

In studying about early statehood, the teacher typically introduced children to the materials through dramatic reading of exciting accounts of true experiences, through songs and poetry, or through lively discussions of movies and filmstrips depicting the subject. Pupils who tend not to react to a straight intellectual presentation of these kinds of materials often become very involved due to the vivid emotional experience and proceed to cognitive learning based upon this initial involvement.

The second type of learning style based on emotional involvement is exemplified by the case of Andy, who responds best in a classroom characterized by an open but friendly clash of ideas. Whether in reading or math, social studies or art, Andy thrives on disagreement, rivalry, and critical interaction.[3]

The Emotionally Neutral

Some students function best in a classroom where the emotional tone is low-keyed and relatively neutral. Interpersonal conflicts are subdued; the immediately perceived tone of the class is intellectual rather than emotional. The teacher tends to focus on the task at hand in a rather objective fashion, minimizing the emotive coloration of his behavior and helping students move increasingly from emotional expression to intellectual understanding and analysis. The student whose learning style falls under this category tends to be threatened or distracted in the previously discussed classroom of high emotional atmosphere.

Example:

Jane, a very bright twelve year old, was constantly upset in the classroom of Miss A who carried on a very active, bold program rife with disagreement and high emotive colorations. When transferred into the classroom of Miss B, Jane's performance changed markedly. Miss B conducted a classroom of explicit intellectual focus where the emotional aspects of learning were subdued. An examination of her school history shows that Jane, who is a rather intense child herself, always worked best in classrooms of subdued emotional tone.

Explicitly Structured

This student learns best when the teacher makes explicit a clear, unambiguous structure for learning. The limits and goals are carefully stated, guiding the intellectual tasks to be achieved as well as the behaviors which will be acceptable and unacceptable in the classroom. This student functions best when he feels safe and at home in a well-defined structure. An open-ended, loosely structured learning setting interferes with his style and thus lessens his learning.

The learning styles of two boys, Mike and Steve, can be contrasted to illustrate the preference for the explicitly structured and that for the open-ended structure described below.

Example:

Mike typically asks the teacher exactly what is expected of him, what sources he should use, what form his report should take, how long it should be, and similar questions. Once given clear and specific answers, he proceeds to do a conscientious job. In learning situations where he must define his goals, select his sources, and decide on a method of presenting his findings, Mike is quite unhappy and insecure. He constantly seeks guidance from peers and from adults.

Open-Ended Structure

There are students who feel at home and learn best in a fairly open-ended learning environment. The overall structure of the classroom is sufficiently visible, yet there is place within it for divergence, for exploration of relevant yet not explicitly preplanned phenomena. A tight structure is resisted by such a student because he tends to feel claustrophobic and to see connections between what he is learning and many other facets of life.

Example:

Steve, who is the same age and intelligence as Mike, seems to thrive in the less defined, more open-ended classroom. In fact, where the tasks and directions are quite clear and explicit, Steve always tries to change or loosen them. He seems to seek more elbow room for his own ideas and enjoys the challenge presented by the open structure. He comes up with novel ways of presenting reports. He does less well when he must follow a prepared form or predetermined sequence.

The Damaged Learner

While this category is too broad, too inclusive to be identified as *a* learning style, it is sufficiently important and commonplace to merit discussion. There are students who are physically normal yet damaged in self-concept, social competency, aesthetic sensitivity, or intellectual development in such a way as to develop what might be called "non-learning" or negative learning styles. The disability is superimposed on his otherwise identifiable learning style. They may systematically avoid learning, reject learning, fantasize, or pretend that they know or can learn. We can contrast them with their counterpart, "normal learners" who might be simply comfortable in a habit, who might be temporarily scared, or who have not as yet learned to be autonomous in learning. The damaged learners need special attention and special treatment depending on their particular damaged approach to the learning situation. It is suggested that a case study be made of this kind of student in order to have a defensible diagnosis and to formulate a program to reduce or eliminate the damage.

The Eclectic Learner

Students who can shift and function profitably with some variety of learning styles may find one or another style most beneficial, but they can adapt to and benefit from a variety. Historically, this type of student tended to succeed in most of

[3] See Michael Scriven, "The Methodology of Evaluation," in Ralph W. Tyler, Robert M. Gagne and Michael Scriven, *Perspectives of Curriculum Evaluation*, Rand McNally & Company, Chicago, 1967, p. 47.

our institutions, for they adapted themselves from classroom to classroom and thus used whatever style paid off at the moment to best advantage. Teachers tended to prefer such learners since the learners made the necessary adjustments and the teachers could continue with their own *teaching styles.*

TEACHING STYLES

The concluding remarks above indicate a relevant dimension that must be explicitly stated; namely, that just as there are learning styles, there are also identifiable styles of teaching. This fact is no great revelation, since we have recognized for centuries certain variations in the way teachers have approached their tasks. We are all aware of the systematic questioning of Socrates as well as the organized lectures to be found in every nation in the world. Historically, in fact, the focus has been on styles of teaching or general methods of teaching, for it was assumed that if one followed a recognized method of good teaching, all educable students would learn.[4] The percentage of those who actually learned and succeeded to earn scholarly degrees was sufficiently high to perpetuate this belief. The recent commitments to individualize instruction and to lower the drop-out rate should force us to reexamine teaching styles and their relative merits.

We speak of teaching style here but briefly, in recognition of the fact that it is related to learning styles. Students' learning styles apply inside schools as well as in the outside world, but inside the classrooms they are influenced by teaching styles.

The idea of teaching style is quite different from the method of instruction used by a teacher. It refers to a classroom mode, a pervasive way of approaching the learners which might be consistent with several methods of teaching. A teacher with a certain style of teaching may use lectures, small group discussions, audio-visual devices and still differ identifiably from the teacher next door. To make this point clear and explicit, several styles of teaching are briefly identified.

The Task Master

This teacher constantly prescribes the materials to be learned and demands specific performance on the part of the students. Learnings to be accomplished are unilaterally specified and an explicit system of accounting keeps track of how well each student meets the stated demands.

The Cooperative Planner

This teacher tends to plan the ends and means of instruction with the cooperation of his students. He is still "in charge" of the learning process; from his adult experience and with professional competence, he guides the learning of his students. The voices of the learners are not only heard but are also respected. The learning process is cooperatively planned and conducted. This teacher tends to support and encourage student participation at all levels.

The Child Centered

This rarely found teacher seems to abdicate his responsibilities. Whatever the students want to do, whatever interests them, they may pursue. The genuinely emergent curriculum would fit this style, for preplanning by the teacher always takes a back seat to the interest and curiosity of the child. This style is not only extremely rare, it is almost impossible to imagine in its pure form because the classroom, with its adult-controlled environment, will influence the learners and automatically encourage some interests and discourage others. A poorly functioning "cooperative planner" style can be mistaken for a "child centered" one.

The Subject Centered

The other side of the foregoing coin is the teacher who focuses on organized body of content to the near exclusion of the learner. By "covering the subject," he tends to satisfy his conscience even if little learning takes place. The caricature of this style is the teacher who remarked at the end of a day, "I taught so well; too bad they didn't learn."*

The Learning Centered

This teacher has a clear, explicit respect for his students *and* for the curricular objectives to be reached, the materials to be learned. He rejects the over-emphasis of both the "child centered" and the "subject centered" styles and constantly emphasizes the concern: "How do I help *these* students with their current abilities and disabilities develop toward our next substantive goals as well as in their autonomy in learning?"

The Emotionally Exciting and its Counterpart

This teacher's classroom reflects his own intensive emotional involvement in teaching. He tends to enter the teaching-learning process with zeal and usually produces a classroom atmosphere of excitement, conflict, debate, and high emotional tone. His counterpart conducts a classroom of subdued emotional tone, where rational processes predominate and the learning is dispassionate though it might be just as significant and meaningful as in the classroom of the emotionally more involved teacher.

THE INTERACTION OF LEARNING STYLE AND TEACHING STYLE

Under separate headings, we have presented brief descriptions of learning styles and of teaching styles. While the focus of this paper is on learning styles, it must be obvious to any informed reader that the two phenomena are closely interrelated. Different instructional problems arise and different outcomes are achieved depending on the combinations found in various classrooms. For example, the incremental learner who functions most effectively in an explicitly structured classroom will function quite differently with Teacher X, who has a subject-centered task-master style, than will his fellow learner whose style may be intuitive and favoring a more open structure. This is consistent with the analysis of Kagan who concludes with the injunction that "New pedagogical procedures should acknowledge the interactions between the dispositions of the learner and the material, and tailor presentations to the preferred strategy of the child."[5]

It is tempting to speculate about the effects of these various combinations. Speculation alone, however, will provide no reliable knowledge. At this point we must realize that both "learning styles" and "teaching styles" are hypothetical constructs offered as useful tools to understand and perhaps explain certain important aspects of the teaching-learning process. Clearly, the styles identified are not entirely exclusive of each other. Some overlappings readily appear and properly so, since

*A remark of Earl Kelley is relevant here: "The job of the teacher is to uncover the subject, not to cover it."

4 See, for example, Harry S. Broudy, "Historic Exemplars of Teaching Method," in N. L. Gage (Ed.), *Handbook of Research on Teaching,* Chicago: Rand McNally and Company, 1963.

5 Jerome Kagan, "Information Processing in the Child," in Paul H. Mussen. John J. Conger and Jerome Kagan (Eds.), *Readings in Child Development and Personality,* New York: Harper & Row, Publishers, 1965, p. 323.

human beings do not come in pure types in order to fit our intellectual constructs. It would be useful to view these styles as reflective of emphasis or of the dominant mode of a learner or a teacher. In other words, the visual learner still gains some benefits from lectures or oral reports, and the intuitive learner does not always avoid step-by-step, incremental learning.

We make the assumption that most human beings can be changed and therefore, to some extent at least, both learning and teaching styles can be modified. It is our further belief that as professionals, teachers must be willing to examine and to alter their teaching styles if evidence or the judgment of fellow professionals warrants such change. Such change in a continuous progress school, or for that matter in any school in a democracy, must always be guided by the key consideration (mentioned earlier): Will this change help or hinder the learner in his development toward autonomy?

Two ideas should be examined briefly to prevent certain misunderstandings. The first of these tends to identify interest with learning style. It is safe to say that every learning style can benefit by student interest and that teachers, regardless of their styles, hope to engender interest in their students. From Plato through Quintillan, Comenius to Dewey, as well as current educational theorists, everyone hopes to have students interested in the ends and means of education. For our purposes, let us make it clear that student interest and involvement can enhance the incremental style, the intuitive style, the eclectic, the damaged, and every other style of learning. While it is true that greater effort tends to follow interest and involvement, this fact does not favor one style over another and can work to the benefit of all styles.

The second likely misconception is the association of intelligence with a particular style of learning–an erroneous notion often used to bolster one's preference for one learning style over another. The incremental learner may be just as intelligent as the intuitive one; the emotionally involved learner just as bright as the emotionally neutral one, etc. At this juncture in educational development, it is safest to assert that intelligence is generally useful in any style of learning.

One further note of caution is appropriate at this point. It should be clear by now that the idea of learning styles is offered here in an exploratory fashion without firm definition or highly specific delineation. Hopefully, clear and precise definitions will be formulated after trying out the ideas in practice and after the insights gained from experience have taken the idea on a "friendly shake-down cruise." Innovation is impossible "if the demand for precision becomes a fetish."[6] Learning style is a relatively new concept; "some newly introduced concepts, such as the now popular 'structure of subject matter' and 'sifted students', are expressions *in search of a definition*. . .These are the terms around which we build our pedagogical knowledge."[7]

Editor's Note by Edwin P. Hildebrand: The Fischers are known nationally for their contributions to education. While acknowledging this fact, we in Colorado may be forgiven for concentrating on the great contribution they are making to WSSSP projects.

As a long-time consultant, Mrs. Fischer has deserved attention because of her position as an important member of the exciting University Elementary School education team at UCLA. But she has done more than speak from a position of authority; she has endeared herself to colleagues in Colorado–and, more importantly–riveted concentration on important insights by her delightful character and inspired use of examples. For instance, the glowing style with which she tells workshop participants of how the first team-teaching experience in which she was involved virtually fell apart–and why–and what mistakes to avoid.

Mr. Fischer, too, says important things about style. We are accustomed, of course, to placing children with teachers by virtue of chronological age or perhaps testing. He suggests strongly it might make more sense to place children with teachers so that the learning style and the teaching style complement each other. How can this be done in a small school where, for instance, there is only one fourth grade teacher? It's an old-fashioned question. My counter-question would be, "Why is there a fourth grade? Wouldn't an ungraded, continuous progress organization open things up so that a shy child would not have to be placed with a staccato perfectionist of a teacher–without calling it fourth grade?"

We've talked about these things for a long time. The Fischers compel us to take them seriously.

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6 James E. McClellan and B. Paul Komisar in the "Preface to the American Edition" of Charles D. Hardie, *Truth and Fallacy in Educational Theory*, Bureau of Publications, Teachers College, Columbia Univ., N.Y.: 1962, p. viii.

7 Ibid., p. viii.

IV B

TASKS THAT ONLY THE TEACHER CAN DO

IDENTIFICATION OF THE ACTIVITIES OF THE INSTRUCTIONAL SITUATION THAT ONLY THE TEACHER CAN PERFORM AND THOSE THAT CAN BE PERFORMED BY OTHER PERSONS, CONTENT OR ENVIRONMENT

by Robert E. King

Robert E. King, superintendent of schools at Meeker, has distilled from his entire professional staff the following report on a crucial question: What in the educational universe must be done only by the teacher; and what may be done by other persons, by materials, by the environment?

Mr. King has bachelor and master degrees from Adams State College and has done advanced study at Columbia University, the University of Nevada and Colorado State College. He has spent 17 years in the public schools, starting as a teacher of English and physical education, moving to a high school principalship in Mosca, and being named superintendent in Meeker 7 years ago.

He has been deeply involved with the Western States Small Schools Project since its inception. Now recognized as an expert in the field of quality in the small school, he has lectured widely on the subject, has been a consultant to the Upper Midwest Project, and has spent the last three summers as visiting professor at the University of Alaska working with the Alaska Rural School Project which prepares teachers for small and remote schools.

One of the stated objectives of the Western States Small Schools Project is to identify the activities of the instructional situation that:

1. Only the teacher can perform; or,
2. That can be performed by other persons, content or environment.

The conclusions of a number of teachers and administrators in Meeker are given in this paper.

* * * * *

Since teaching-learning is such a highly diversified art (varying from teacher to teacher, subject to subject, level to level, student to student, age to age, and even day to day), any one of the conclusions later listed herein will doubtless have many exceptions. Further, individualization is not a complete either/or situation but is subject to varying degrees.

The method used in summarizing was to have some project teachers choose from the writer's list of "activities of the instructional situation." They were then to decide how each could best be performed and write upon those about which they had strong opinions or could provide apt illustrations based upon experience. The list itself is not exhaustive but is suggestive of the many different aspects of the teaching-learning process that occur daily in most WSSSP schools.

The conclusions may well apply to learning everywhere in all kinds of schools. However, they are thought to be particularly appropriate to the small rural schools which are faced with the problem of limited adult human resources along with the tremendous potentialities inherent in a full range of student ability, achievement, talent, and interest. They are also based specifically upon several years of experience gained in attempting to individualize the organization of the curriculum and the learning opportunities in the classroom.

GENERAL FINDINGS

A teacher moving toward a continuous progress individualized structure in his class soon finds that he cannot be all things to all people or "the self-contained teacher." A teacher may be able to perform any one of the varied activities related to individualized instruction if given time. However, the tremendous range of student needs, abilities, interests, natures, and backgrounds with which he is faced in the normal classroom makes it impossible for him to perform all functions of individualized instruction if he in any way tries to vary his program to deal with student differences.

In a "traditional" graded classroom where it is assumed that thirty identical students will learn identical subject matter at an identical pace in an identical manner, the teacher can be assigned responsibility for most of the instructional activities. However, as we move to differentiated activity, pacing, resources, and expectations, we find that more and more of the functions must be transferred from the teacher–to students, to aides (either older students or adult lay assistants), to materials, to equipment, or to the environment (both school and beyond school). This does not lessen the importance, responsibility, or task of the teacher at all. It makes the teacher's role more important. He becomes a facilitator of learning and an organizer of resources in his new role. He has to train others to assume responsibility and share jobs he can no longer do by himself. He must prepare himself, his materials, and his classroom procedures farther in advance and in greater depth. He must be able to deal with any aspect of the curriculum at any time during the year.

Therefore, in the individualizing process, we see a shifting of many functions away from the teacher–giving him the opportunity and time to do those things for which he is best prepared.

Page 36 illustrates our general conclusion that there are two functions which only a teacher can perform: Planning the curriculum and choosing materials. The teacher was conceived to be the prime functioner in diagnosing student needs and in coaching, but these are functions capable of being shared to some extent by other human resources. In all other activities, the teacher is pictured as being co-responsible or as having little or no direct responsibility.

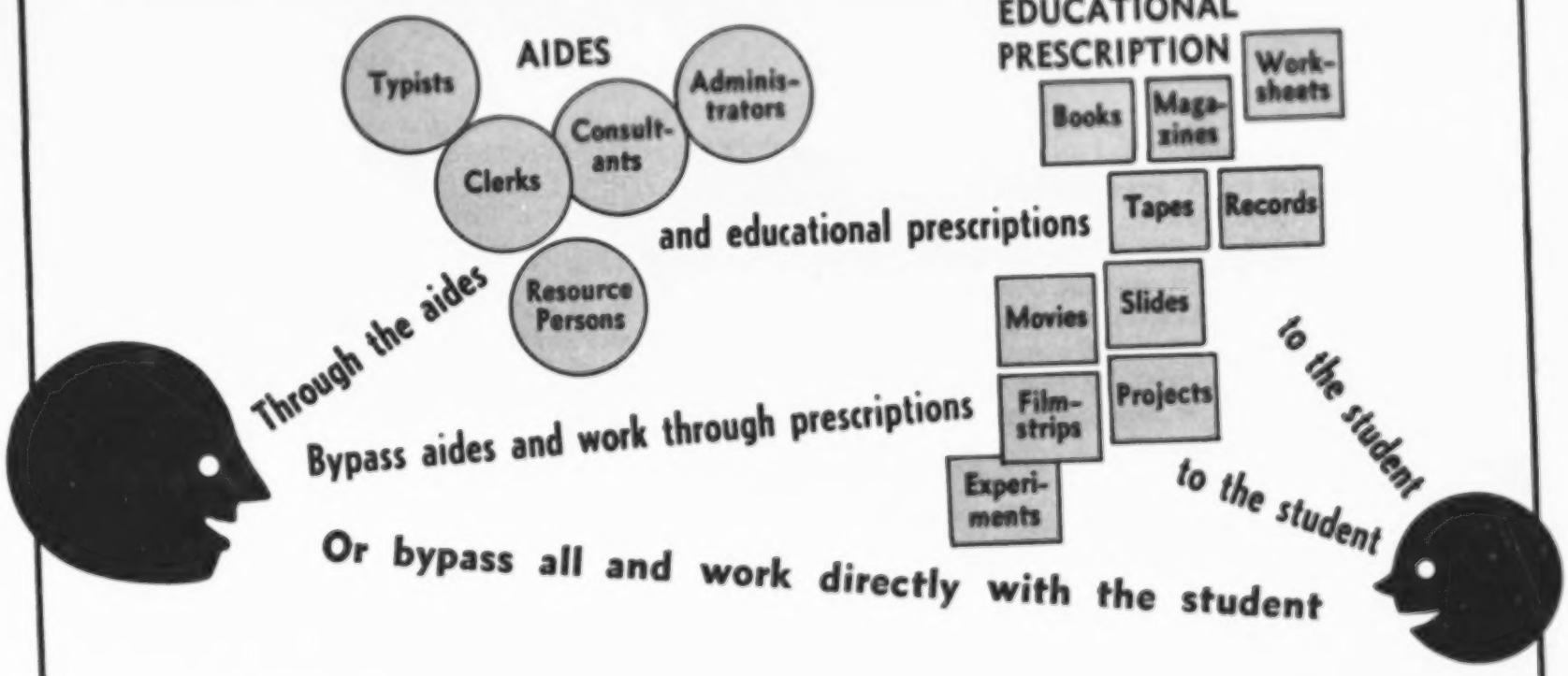
Page 37 presents another way of looking at the alternatives open to a teacher in the classroom situation.

INDIVIDUALIZED CLASSROOM

EDUCATIONAL ACTIVITY	PERFORMED BY
Planning Curriculum	TEACHER
Choosing/Creating/Adapting Materials	TEACHER
Diagnosing Student Needs	TEACHER OR SPECIALIST—Student
Setting Goals	TEACHER—STUDENT
Motivating	Teacher—Student—Aides—Materials—Equipment
Planning Activities	TEACHER—STUDENT
Assigning Activities	Teacher . . . . . .Materials
Choosing Alternates	STUDENT
Getting Materials	STUDENT—Aides
Researching	STUDENT
Doing Activities	STUDENT
Manipulating Equipment	STUDENT—Aides
Discussing	STUDENTS
Role Playing	STUDENTS
Job Experience	STUDENT—Specialist Supervisor
Exposing	TOTAL ENVIRONMENT—HUMAN AND MATERIAL
Giving Directions	Teacher . . . . . .MATERIALS—Equipment
Demonstrating	Teacher—Students—Aides—Specialists
Explaining	Teacher—Students—Aides—Materials
Questioning	Teacher . . . . . .Aides—Materials
Lecturing	TEACHER—SPECIALISTS
Coaching	TEACHER—Students—Aides
Guiding	TEACHER—STUDENT
Drilling	Teacher . . . . . MATERIALS—EQUIPMENT
Dispensing Information	Teacher . . . . . MATERIALS—EQUIPMENT
Disciplining	Teacher-STUDENTS—CONTENT
Checking Work	STUDENTS—Aides
Testing and Grading	Teacher—Students—Aides—Materials—Equipment
Evaluating	TEACHER—STUDENT

A teacher's options in the individualized class

The teacher can work:



EDUCATIONAL ACTIVITIES

Planning Curriculum

The planning of the curriculum should in all cases be done by the person best qualified by virtue of training and experience to perform this function.

In the individualized class, this becomes all the more important since typical scope and sequence planning by outside curriculum specialists or text authors is either too narrow in scope or is not appropriate in total for a particular class. This is based on the assumption that each class contains a range in achievement almost equal to the year in school plus other ranges of ability, interest, etc. A curriculum broad enough and deep enough and varied enough to take care of these differences is essential. The perimeters of the curriculum must be broad enough to encompass all students within the class. Teachers may work together in curriculum planning but often in the small rural school, there is no one else in the same grade or subject area with whom to work. In any case, this is a job the teacher must perform in the continuous progress school and cannot delegate to students, aides, or others. Other tasks must be shared so that this all-important one will not be slighted.

Choosing/Creating/Adapting Materials

The choosing of materials can be assigned only to the teacher. A broad enough range of materials must be found, created, or adapted and then prepared and made available to the students so that they will have options and will have available resources. The teacher's training and experience best prepare him to do this job, especially since he now has time to evaluate feedback from students, tests, and observations as to the effectiveness of the materials.

A continual modification of materials seems to be the general rule in classes where individualization has been instituted. An incessant demand seems to be felt by teachers to prepare "just one more set" of some special materials–and then the class will have everything. That this "one more set," when completed, does not satisfy all needs but gives way to "just one more set" testifies to the constant seeking by teachers for ways to help all children learn.

More texts and other material resources which have been prepared with the graded school in mind are not self-directive and require teacher explanation. A great deal of modification is usually necessary to adapt them to individualization. Supplemental explanations, assignment sheets, and check-up tests must be prepared. This requires teacher time and talent to accomplish.

Often teachers find it more expedient to start with a limited number of resources and create their own materials with built-in, self-directing devices. This is especially true where individual study labs and materials cannot be purchased commercially.

Diagnosing Student Needs

The diagnosis of individual needs rather than class needs is a necessary component of individualization. This process demands much teacher time since it may involve class analysis of test results, careful observation of student work, and personal interviews with the student, his previous teachers, or his parents. The teacher, assisted by guidance or testing specialists, is the central person in diagnosing student needs. This process is more difficult in small rural schools where guidance counselors are not available. Some sharing of the responsibility for diagnosing by the student is possible and is to be encouraged. However, the teacher is still the one best qualified for this prime function if individualization is to proceed on a rational basis.

Unless differing programs are to be prescribed for individual students, there is little sense in diagnosing individual needs. If the class is to be taught as a total group with identical assignments, pacing and tests, the diagnosis of group norms and needs will suffice. Thus, individual diagnosis only has meaning if individual prescription and mastery expectation follow.

Setting Goals

The setting of individual goals is extremely important to continuous progress. Where formerly group goals and their motivating force were important, now a real recognition of individual differences is of prime importance. Lost motivation can be replaced wholly or in part by the setting of goals by the individual student in conference with the teacher. Some students have the maturity and foresight to set up challenging yet achievable goals on their own with only a minimum of teacher guidance. Others require a maximum of teacher direction. The teacher should work toward individually established goals whenever and wherever possible. Impossible goals frustrate students. Goals too low or non-existent create boredom. Learning the balance between these extremes should be a constant aim of education and is especially significant in the continuous progress school.

The commitment which a student makes toward his goal can be in the form of a contract–oral or written–with the teacher, or it can be merely an informal assumption on the part of both. Modification of goals is again a joint venture between student and teacher.

Motivating

Motivating individuals to learn and to "grow" is not just a function of the teacher but is the sum result of the total environment, both human and material. Less extrinsic teacher motivation is needed when a student is responsible for part of his own motivation. Other factors such as encouragement from fellow students, aides, and parents, and the use of stimulating materials, equipment and facilities, also lessen the need of teacher motivation. As a result, the teacher will have a more natural enthusiasm for introducing students to subjects.

Motivation is a key factor in the continuous progress school. Experience indicates that when students are put on their own to work at their own pace, a certain number may have no pace at all–they just stop. Many others, of course, proceed at least equal to the norm in a non-individualized class, while a few generally take right off and soar. Those who stop or proceed at a snail's pace are a continual frustration and challenge to teachers. The teacher will naturally revert to any technique he knows in order to get him moving. A teacher in an individualized math program in upper elementary has this to say:

> "The students in math who do not do very well can be motivated by saying, 'If you do not get this page done, you will stay here until it is done.' The ones who do *better* are motivated by their *friends*. They want to be doing the same work as their friends. The ones who do the *best* are motivated by *a real interest in the material* they are using."

Planning

Once the perimeters of the course are set, the materials are made available, the student's needs determined, and his goals are

set, the planning of activities to reach these goals becomes the next step. This is a joint student-teacher venture. The student should participate as much as possible to reach the goal that he has helped set. The teacher serves as an advisor who suggests and guides.

Assigning Activities (Prescribing)

In the individualized curriculum, it is not necessarily true that teachers never assign or prescribe specific work for students to accomplish. The idea of a prescription following a diagnosis seems to be a popular one in the continuous progress mode of organization. When prescribing is done, however, it is sometimes better to have the assignments written as part of the content so that, as individuals complete specific units of work, they can go on to the next without waiting for the teacher to physically prescribe or assign new work. Twenty to thirty such daily assignments are often required where individualized instruction is in progress. If each of the assignments had to be given orally by the teacher, a great deal of teacher time would be wasted.

Choosing Alternate Activities, Materials, or Methods

The provision for options or alternatives is central to individualization. Where alternatives other than change in pace are planned, it is also necessary to have alternative activities, materials and methods available to the student. But it is *the student's job* to choose among the alternates. Much individualization to allow for differing interests and abilities is possible when students are given choices. The less the teacher interferes with the decision after providing the options, the more a student will learn to develop his own basis for choosing and for living with his choice.

Getting Materials

As individualized instruction activities increase, the amount of available materials must also increase accordingly. Once a single textbook in the hands of the student amounted to the total of the materials available; the desirable information retrieval network today for individualizing instruction should consist of an assortment of films, filmstrips, books, magazines, tapes, recordings, etc. Once a teacher spent the first day of school passing out the textbook; now each day presents information retrieval problems to youngsters following an individualized program of study.

This situation should not be construed to mean that by its increased complexity, it should demand more of the teacher's time and energy. This is a type of routine which a brief training period would qualify an aide or student to handle competently. Students themselves can probably handle the bulk of material retrieval providing the physical organization of the material has been done with this in mind.

The teacher's job is to see that the arrangement of the environment facilitates the situation in which anyone needing any given material can get it himself. The possibility of equipment handling information retrieval even in the form of pictorial materials, projectuals, films, etc., should also be considered by today's teacher.

Researching (Questing) and Discovering

There seems to be a high value placed on the type of student activities which allow them to formulate their own problem and plan of attack rather than absorbing an array of information laid out by the teacher or textbook in a pre-organized fashion.

Questing, discovering, or researching has value only as a student activity. If it is shifted to aides or assumed by the teacher, its worth as an instructional medium is negated.

Doing Activities

It should be emphasized that the actual doing of the assignment (the exercise, the drill, the project, the research, the experiment, the composition, etc.) should *always* be carried out by the student. Taking away this responsibility from him by a teacher, an aide, a parent, or anyone else only serves to make an intellectual cripple of him. The individualized structure makes it both necessary and possible for teachers to work more closely *with* individual students. This easily can degenerate into doing the work *for* the student if the teacher is not on his toes. The teacher's aim constantly must be to make himself unnecessary to the student – to find ways for the student to stand on his own and be independent of the teacher.

Manipulating Equipment

Only the most brief training period is required to teach even primary youngsters how to run tape recorders, record players, filmstrip machines, and the simpler 8 mm and 16 mm film projectors. This equipment should be immediately accessible to all students, especially when they are doing individual work.

Manipulation of audio-visual equipment should practically always be carried on by persons other than the teacher. Malfeasance of teacher time results if teachers assume this responsibility – especially when this job can be carried out not only by the teacher aides but also by the youngest of school children.

Discussing

Discussion as a mode of instruction implies that the process of exchanging ideas, stating opinions, group interaction and group discovery is not only an educationally viable process, but a desirable one.

If the *process* of discussion is the chief value of discussion, the more the students take over this activity the more value the activity has. As a matter of fact, the teacher's role should be that of organization of the discussion, although in most cases not even this is required. His important role is to serve as a consultant. (Aides and specialists can also act as consultants.) Actually, the only reason the teacher shouldn't participate in discussion as a human being is the tendency conditioned by decades of traditional practice by teachers of dominating the situation into one-way communication. Inasmuch as discussion constitutes a human interchange of ideas and opinions, equipment and material can never perform the function of consultant.

Role Playing

The main objective of the role-playing activity is to induce the student, through playing a role, to see another human point of view. The student should learn to interact in a way that perhaps normally wouldn't occur to him or to interact in a way that he normally would be reluctant to do for some reason. The emphasis, therefore, is on the student and his outlook and behavior.

The teacher may participate, particularly in setting up the role-playing situation, even though the activity will be performed primarily by students. The teacher may also wish to play one of the roles; this is possible and even desirable in some cases. Aides, specialists, and other school-connected persons could conceivably participate as well.

Inasmuch as the emphasis here is on human interaction,

materials and equipment are almost out of the picture unless they would enhance the role the student plays.

Working (Job Experience)

We in the WSSSP, through our Career Selection Program and Student Aide Program, have found that one of the most powerful tools of learning is actual work experience. It is particularly effective for underachieving students. Work experience has been arranged in a variety of ways such as *Vocational Exploration* under the Career Selection Program, where students work in community businesses for a portion of their schedule; *Office Aides Program*, where students are assigned job experience in school offices; *Teacher Aides Program*, where students are clerical assistants to teachers; or the *School Aide Program*, in which older students are assigned to work under teacher supervision in the classroom, helping either in the instructional or clerical roles as the teacher desires.

In all these situations, the student has central responsibility for learning by doing. Supervision, as needed, is supplied by the job foreman or teacher. Either a supervising teacher or the principal coordinates the program for the purposes of grading, advising, or awarding credit to the students.

Exposing

Exposing students to ideas, to people, to artistic work, and to other cultures as well as his own, is a function of the total school environment. It includes teachers, students, resource persons, halls, walls, bulletin boards, display cases, equipment, materials, even the very air waves and the wider community. From this wide exposure, the individual student may take that which seems most relevant and internalize it into his own personal development. The more exposure, the more individualization will occur. A teacher certainly does not stand alone in this function but is only a part of the total environment. The richer this environment is made, the less load a teacher must carry here and the less the students will be limited by teacher limitations—limitations of time, talent, or background.

Giving Directions

The act of giving directions, while it remains a teacher's function to plan and carry out, should be contained within the student study materials wherever possible. These materials may be written or taped. Thus the teacher prepares the directions carefully, then commits them to a form that is accurate and tireless. In the traditional classroom, where one set of directions is given simultaneously to thirty individuals, a teacher may efficiently deliver them orally. However, in the individualized situation, the same set of directions may have to be given thirty separate times as each individual reaches that point in the course. The logistics of this situation strongly points to inserting the directions into the content so that a teacher's function is to prepare them only once and, of course, to revise them as feedback indicates advisable.

Demonstrating

Learning by imitating others is one of the oldest educational modes. This can be capitalized upon in the individualized instruction as it often is in the traditional classroom. Others, including students, aides, or specialists, can share the job with the teacher. Demonstrating is particularly effective in multi-grade and multi-age classrooms where the younger student can learn many behaviors from watching the performance of older or more adept students.

Explaining

The act of explaining retains its importance in the individualized classroom as in the traditional classroom. The only difference is that it is assumed that explanation will often be done on an individual or small-group basis as needed. Seldom will it be appropriate to take the time of an entire class for this. Thus, the total time required for explaining becomes greater; and the teacher must utilize aides, carefully prepared materials, communication media, or even other students. Explanation should be withheld until the student requests it or until nonverbal cues such as his work or a puzzled expression will indicate when it is needed.

Questioning

The Socratic method is particularly effective when dealing with individual students. The teacher usually can perform most effectively the role of questioner, but he can be helped by aides or by materials encompassing this approach.

Lecturing

As teachers individualize instruction, the total time spent in lecturing generally declines. Where lecturing is still deemed appropriate, the matter of careful preparation becomes of great importance. The teacher in an individualized situation is aware of the terrific range of differences in any group of students and must prepare a lecture to meet this range. The utilization of specialists through amplified phone or in person often also will take the lecture form. When the lecture is used, the teacher is advised to expect a wide range of impact upon the students.

Coaching (Giving Individual Assistance)

Individualization is a structure which both permits and requires the maximum of coaching or the giving of individual assistance. Freeing a teacher from some of the other functions is of prime importance so that he has time for the one-to-one relationship of guiding and shaping behavior. Aides and fellow students can share this function with the teacher but can never completely take it over.

In order to be able to assist individuals at any point in the learning continuum, a teacher must have mastery over more than a single daily lesson plan or preparation. He must literally have command of a total range of both the lesson plan and the preparation at any given moment. It is in this role that he can achieve his maximum effectiveness and satisfaction as a teacher.

Guiding

All teachers, especially individualizing teachers, have a guidance function. Guiding students through learning difficulties is one of the most important functions a teacher can perform. In helping to guide or direct individual students, the teacher's goal should be to have the student participate to the fullest in making his own decisions, to the point that the student can become self-directed and an independent learner.

Drilling

Drilling of students to achieve mastery and accuracy has traditionally been the teacher's function. However, it is strongly urged that as much as possible this should be integrated in the content or be performed by other than the teacher—such as a teacher aide, a fellow student, or instructional media.

Dispensing Information

Dispensing information has been a function traditionally reserved to the teacher and the textbook. However, increases in

the amounts of information as well as the newer means of dispensing information have led school people to believe that this function should be shifted to equipment, to a wide variety of textbooks and materials, to specialists, and to aides, as well as to the teacher.

This does not, of course, mean that the teacher is abdicating responsibility, but rather that he is assuming the more important responsibility of guiding and directing students and of creating fruitful instructional situations which the student finds stimulating, informative and relevant.

Disciplining (Maintaining Order)

In the individualized school, the burden of maintaining reasonable order is shifting more and more to students themselves, to curriculum content, and to facilities. Ideally, the more involved students become in pursuing their own educational goals, the less time a teacher has to spend in controlling students and the more time and energy he can devote to organizing materials and facilities and working with individuals in their learning.

Checking Written Work

The business of checking written work must be largely transferred from the teacher to the student himself, or to aides, in the individualized class. If this is not done, it becomes too cumbersome and student work must then be restricted. There is educational value in a student learning to look for his own errors. The teacher's function is to see that materials and facilities make this job as simple as possible and that students understand the importance of doing it accurately. In drill work, the student or an aide can do all the checking. In essay or concept work and in composition, it may be necessary for the teacher or an aide to do the checking. However, neither teachers nor aides should *correct* work. This is a job for the student. We must not try to do his learning for him.

Testing and Grading

Testing and grading can be done through many of the elements of the class besides the teacher. The students themselves, aides, materials, and equipment all can be integral parts of the testing-grading situation. Often in a continuous progress structure, testing may be worked at any time for various individuals and the teacher will need the help of other persons or resources to get it done.

Evaluating

The process of evaluation is becoming more and more a teacher-student shared function. This viewpoint on evaluation refers not only to the effectiveness of the learner but also to the effectiveness of the teacher, of the content, or of the facilities for learning. In the areas of affective learning, such as appreciation, it may well be that the student is the only one who can evaluate any behavior changes in himself. As much as possible, the teacher should help the student learn to evaluate his own work, attitudes, etc. As one teacher says:

> "Much of the difficulty I am having with my individualized math stems from the fact that the students are either unable or unwilling to evaluate their own work. They think of progress in terms of pages completed rather than any real understanding they have gained from the work. I would hope to work for more and better student participation in this activity rather than limiting it to the teacher."

Editor's Note by Edwin P. Hildebrand: There's a great deal a teacher can do. We've all known and seen that for a long time. Bob King puts us up against another question—why should he? Why should the teacher motivate, assign, explain, direct, drill? Why doesn't he do those things that only he can do? Bob King describes these functions as planning the curriculum and choosing the materials. Others may say they are diagnosing and prescribing; and if you use those terms, Bob King's question comes out in another form—should the teacher give the medicine after diagnosing and prescribing? Or should he leave that to someone else who can do it at least as well as he, while concentrating on what he's really needed for?

The question answers itself. And it explains why individualizing learning has so long been an unattained ideal. A teacher can't individualize if his job is unmanageable; and his job is unmanageable as long as he tries to do everything himself. When he frees the learner to learn, though, and when he makes use of the environment and of other people to help the learner to learn—then the teacher's task becomes manageable and he can individualize learning as we have all so long and so ineffectively said we want to do.

IV C

DEMANDS ON THE TEACHER MADE BY INDIVIDUALIZED INSTRUCTION

GUIDELINES CONCERNING THE TEACHER'S PATTERN OF INTERACTION WITH STUDENTS IN THE LEARNING PROCESS

by Charles Jaquette

Charles Jaquette addresses himself to an important question: What is the teacher looking for in the large group situation, in the small group situation, in independent projects?

At the time of writing this paper, Mr. Jaquette was assistant principal of the Meeker High School. He is now head of the English Department at Sahuarita, Arizona.

He has bachelor and master degrees from Western State College. He has been a John Hay Fellow at Northwestern University, and has won appointment to a number of institutes.

Mr. Jaquette was involved with the Western States Small Schools Project for five years, and has served as consultant to groups dealing with the problems of small schools including the Upper Midwest Small Schools Project. He has a number of publications to his credit.

* * * * *

The learning process involves various activities which in turn affect the teacher's pattern of interaction with the students. These activities could be roughly classed as large-group activities, small-group activities, individual and laboratory activities.

Another factor which affects the teacher's interaction with the student is the teacher's objectives in the teaching-learning process. At times it is the teacher's objective to be a source of information and explanation, an issuer of directives. At other times the teacher may wish to shift the burden of information-dispensing to materials and equipment. In these cases much of the responsibility for choosing sources and for seeking information falls to the student.

At times it is the teacher's objective to create an instructional process in which the student bears a great deal of responsibility for selecting his own objectives (probably conjointly with the teacher), selecting his materials, finding his information, evaluating his progress, and in general, carrying on the instructional process.

My view, and the thrust of much modern educational theory, is that *the ultimate objectives of the course and school should be shifting away from the dispensing of information function toward creating situations which involve the student as a participant in the instructional process and in classroom interaction.*

Large-Group Activities

In listing the instructional purpose of large-group instruction, Meeker High School included presentation, stimulation, group diagnosis, and entertainment as broad categories. The institutional purpose would include to conserve teacher talent, to conserve teacher time, to control the sequencing, to provide a common experience, to allow for maximum preparation, to provide diversity, and to provide efficiency. Large-group instruction can provide for enrichment, practice, remedial, and repetition activities. It can be individualized instruction when all pupils are ready for a common experience.

Large-group situations will most nearly resemble the traditional pattern of interaction. Most characteristically, the interaction in the large group is one way; that is, student attention is directed toward the teacher or some other medium of instruction such as film, overhead projection, etc., at the front of the room. This is considered to be the focus of attention.

The students in the large-group situation are receptors. They play a passive role in whatever interaction there is, and rarely is it the practice to solicit a great deal of student-initiated talk in such a group. The teacher may occasionally ask questions designed to elicit answers from the students, but these usually are meant to see if the student is paying attention or whether he has read his assignment, and therefore rarely serve to shift the focus of attention off the teacher. Such questions are at best a token effort to create student participation. It is not unusual in large groups for the teacher to spend a significant amount of effort in attempting to quiet spurious talk by the students.

Physically, the large-group pattern of instruction may be represented by a triangle, at the apex of which stands the teacher, the focus of attention. Also, the grouping of the students will be orderly, in rows, auditorium style, whether the group is meeting in an auditorium or in the classroom.

It should be noted that the mere physical placement of seats facing toward the teacher as focus of attention does not assure that the student is attentive.

Small-Group Activities

Possibly the small group should be defined by the number of words spoken by the teacher in proportion to the number spoken by the students. If there are eight people in the group, counting the teacher, and the teacher says one-eighth of the words or less, it is a small-group activity. As the proportion of words spoken by the teacher rises to one-half or more of the total, the group more and more closely resembles a large-group activity, regardless of the number of persons involved. This means, of course, that the proportion of student-initiated talk should increase greatly in the small group. The pattern of interaction should be one where the students are participants and the teacher, if he participates, is a fellow participant or a resource person to contribute when called on to do so.

The focus of attention in the small group should shift from person to person as each contributes his share to the discussion; instead of attention being riveted on the apex of the triangle or front of the room as in the large group, it should float and shift around the members of the group.

The physical form of the small group should be more fluid than that of the large group. Perhaps the most typical physical arrangement of the small group is the circle. However, there is much possible variety; a group of students in a circle does not guarantee the presence of small-group activity. For example, if the teacher is a part of the circle and does all the talking, it's difficult to distinguish this activity from the large-group activity, except that there are fewer people. Further, a circle in which the teacher is in the center is quite different from a circle of students which includes the teacher.

Although the small group need not necessarily be seated in a circle, certain physical arrangements are more conducive to small-group activities than others. If the arrangement is an arc, the interaction between students and teacher will almost certainly be different from that of the circle.

The teacher working with small groups must also be prepared for a shift in values as well as a shift in the focus of attention. In the large group, what the teacher considers valuable and important will be the subject of consideration. In the small group, where a good deal of the talk is student initiated, the subject under consideration should probably be that which is considered valuable and important to the students.

Will the students ever initiate discussion compatible with the aims of the school? A complicated question; however, if one of the aims of the school is to encourage students to ask questions, then if he *does* do so, he is fulfilling the aims of the school. Will these questions raised by the students to be discussed by students be relevant? If the student is to understand the meaning of the world "relevance," a good place to start his instruction is where he is—with what he regards as relevant—and work from there. And the possibility exists that the teacher isn't always the last word in what is relevant at all.

All of these questions have to do with the value of discussion as discussion: Is it a process of human interaction? An activity to "go over" certain subject matter? Or both? In a discussion, should the students grapple with problems *they* regard as important, or deal with factual material, or is it possible to do both?

The teacher who values small-group activity as a mode of instruction and who does it well should probably lean toward the first point of view: Discussion is valuable as discussion.

What this has to do with the teacher's interaction with his student is that the dominance of the group should shift from the teacher to the members of the group. The teacher should value provocative ideas whether or not they are ostensibly the most "efficient" route to his objectives. Implied here is the philosophical bias that efficiency may not always be best measured by the number of facts reproduced on a test, but by the student's ability to disclose and work with problems in a group situation.

Individual and Laboratory Activities

An individualized instructional situation may be defined as one in which the student exercises options as to (1) *what kind* of assignments he does, (2) the *quantity* of work he does, (3) the amount of *time* he requires to do his work, or combinations of these.

Further, the work that each student does in the individualized situation should correspond with his aptitudes or interests or both. The type and amount of work would then be decided between the teacher and student, but the point is that probably the students in a given class will be working on a variety of things at a given time.

This kind of an instructional mode has implications which pervade the entire fabric of the classroom procedure. For one thing, the marks a student receives on his report card will have to be arrived at in some quite unconventional way. Inasmuch as the assignments one student does may vary radically in type and quantity from the assignments of another student, numerical averages or medians or like measures commonly used to compare the performances of students' work on a fixed number of assignments become almost meaningless.

Perhaps such averages and medians always have been inaccurate in reflecting what a student actually accomplishes in a course, but the individualized program magnifies this discrepancy.

Also, since it is conceivable that in a class of thirty, the students may be working on thirty different assignments at a given moment, the amount and variety of resource materials will have to be greater in the individualized situation than in the conventional classroom. In order to provide for the individual differences of the students, materials should consist of traditional textbooks, programmed materials of various types, other types of self-instructional materials, filmstrips, recordings, paperbacks, magazines, films, etc.

Patterns of interaction between the teacher and students in the individualized situation should obviously differ markedly from those of the more traditional types of environments. For one thing, the teacher should relinquish much of his authority as a source of information.

The expert-novice relationship characteristics of the normal classroom should be supplanted by a partnership relationship in which the teacher, along with the student, seeks information sources and activities most relevant to that particular student's needs and interest. It should be stressed, however, that the teacher shouldn't abdicate his professional obligation to recommend or even insist upon certain courses of action which in his judgment would best serve the needs of the individual student. The teacher, in independent study (unlike small-group), should retain the option of requiring certain amounts and types of work to be done in order to meet the aims of his course and the school, but these requirements may vary from student to student and in any case should be flexible enough to allow for a wide range in abilities. Also, inasmuch as the teacher has subject matter and professional training, he should be available as an information source to help the student formulate his objectives.

The interaction pattern in the individualized situation should be one in which the student assumes more responsibility in determining what his assignments are, or how they are to be done, or when they are to be done, or all three. The amount of responsibility given a student may range from the class in which the teacher maps out the same work for all students and the individual student has only a time option (that is, he works through the prescribed course at his own speed) to the course in which the student may plan out a year's work or four years' work entirely on his own, provided such a plan is, in the teacher's judgment, consistent with the aims of the course and the student objectives.

It is even possible in the individualized situation for the student to assume the responsibility for evaluating his own work. The teacher should encourage students to judge their own work in terms of how satisfactorily such work takes them from where they are now toward meeting the ultimate objectives of the course. Evaluation is no simple matter, however, and many teachers are no doubt justifiably chary of giving over evaluative

powers to the students themselves with their limited perspective and immature judgment.

On the other hand, there are times when the student is the only really logical judge of his own work. For example, when the ultimate objective of a course in music appreciation is to have the student appreciate music, who is the best judge of whether an assignment has been successful in enhancing the student's own appreciation of music?

In essence, once the teacher has set up the course, outlined its aims, and explained the options to the students, he should interact with the students as a consultant or guide in helping them to select those activities which are most fruitful in terms of the student's own aptitudes and interests and the goals of the course.

The individualized classroom should be characterized by varied activity–with the focus of attention going in several directions as the students pursue their own interests. The teacher should interact with students on a one-to-one basis while other students use the variety of materials and equipment available and engage in a variety of activities.

The seating of students and general arrangement of the physical environment should be flexible enough to suit the requirements of the activities the students are engaged in. Perhaps tables for writing and work space should be provided; seating and work space should be provided close to equipment (tape recorder, record players, projectors, etc.); reading areas and seating should be provided for; areas and seating suitable for small discussions should be available; storage for materials should be readily accessible to students. The teacher's desk in the room need not be at the front. In fact, if a desk is used at all, probably it should be somewhat centrally located, so that interaction between the teacher and the students is easy.

The physical arrangement of the individualized classroom should also be fluid enough to allow the teacher to bring the students back into a large group activity in case there is information which needs to be conveyed to everyone. Or the teacher may also want to form small groups of students with common problems or interests, and this should be easily possible in the individualized situation.

It should be realized that whereas the teacher in an individualized program is perhaps only talking to one student at a time, in a sense he is interacting with all the students individually all the time through the structure of the course and the materials, content, equipment, and activities which fit into the structure of the course.

The net result of the individualized program should be an interaction pattern in which the teacher has relinquished much of his governing, directive, information giving, and evaluative functions which, through reorganization of his class structure, he has sewn into the materials, activities and content of his course. Then these functions should be taken over substantially by the students themselves.

Editor's Note by Edwin P. Hildebrand: How a teacher performs is, of course, one of the key questions in the analysis of the process by which students learn. Chuck Jaquette addresses himself to this question from a very interesting background. He was, when I first met him, a superb teacher and a traditional teacher–lecturing well, teaching and explaining and helping with great skill and efficiency. The last time I saw him, he was still a superb teacher, but of quite a different style. He had transformed himself in fact into a manager of the learning experience; students in his room discovered a lot, but with comparatively little help from Chuck. He had set the atmosphere and the motivation and the opportunities so that they wanted to learn and knew how to learn on an independent basis. Such a transformation– from a great teacher of one style to a great teacher of quite an opposite style–is rare. It testifies to the worth of the man and the depth of his growing body of convictions about the purposes of education.

In his paper, he describes well one pattern of interaction of a teacher with students in a system well adapted to flexible scheduling but in many ways applicable to traditional block time scheduling. There are, of course, more ways to interact than in small groups, large groups, and independent study. Chuck devotes his attention to only these three modes, but he has much to say that is useful to all of us.

IV D

THEORIES OF LEARNING AND THEIR APPLICATION TO INDIVIDUALIZED INSTRUCTION

IDENTIFICATION OF UNDERSTANDINGS NEEDED BY THE TEACHER, INCLUDING THEORIES OF LEARNING, IN A CONTINUOUS PROGRESS ORGANIZATION

by John H. Meier

John H. Meier, a consultant to the Western States Small Schools Project, examines theories of learning and their applicability to individualized learning in small schools in the following paper.

Dr. Meier has his bachelor's degree in philosophy from Regis College; his master's degree in psychology and his Ph.D. in educational psychology were earned at the University of Denver.

He became a public school teacher in 1956 and a school psychologist in 1962. The following year he went to Colorado State College as associate professor of psychology, counseling and guidance. While there, he served as director of the Child Study Institute and codirector and research psychologist for the New Nursery School for environmentally deprived children.

He is now associate for program management, individual learning disabilities, at the Rocky Mountain Educational Laboratory in Greeley.

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Learning is what education is all about. Therefore the teacher, whose business is facilitating learning, should be aware of the current theories about how and why people learn. Theories of learning have been advanced down through the ages for as long as man has recorded his thoughts.

There is some argument among those who prepare teachers as to whether they are *educating* or *training* teachers. The former commonly implies a more humane, active process of an individual's realizing his innate talents as opposed to the latter concept which has connotations of shaping behavior and imposing ideas on a passive individual from outside of the individual. A discussion of theories of learning involves issues about how teachers are to be trained or educated.

To avoid getting hung up with ambiguous or inappropriate terminology, we will focus on the individual learner. If individualized learning is a worthy goal for children, is it not an equally desirable goal for adults? This paper makes a simplified presentation of two major theories of learning and their practical application to individualized learning for both children (students) and adults (teachers). Within each theory, there are numerous complex refinements which will not be mentioned in this presentation.

BEHAVIORISTIC THEORY

The first school of thought we will call *behavioristic* (sometimes the current version is called neobehavioristic) and discuss a few of the basic premises upon which this theory is based. A leading exponent of behaviorism in our contemporary society is B. Frank Skinner. In a renowned article entitled "Walden Two," Skinner indicated that the stimulus-response and operant conditioning techniques for modifying human behavior are so powerful and predictable that he could develop any kind of person one would wish if he had that person at his disposal from early childhood. He suggests that he can shape behavior to fit virtually any predetermined mold.

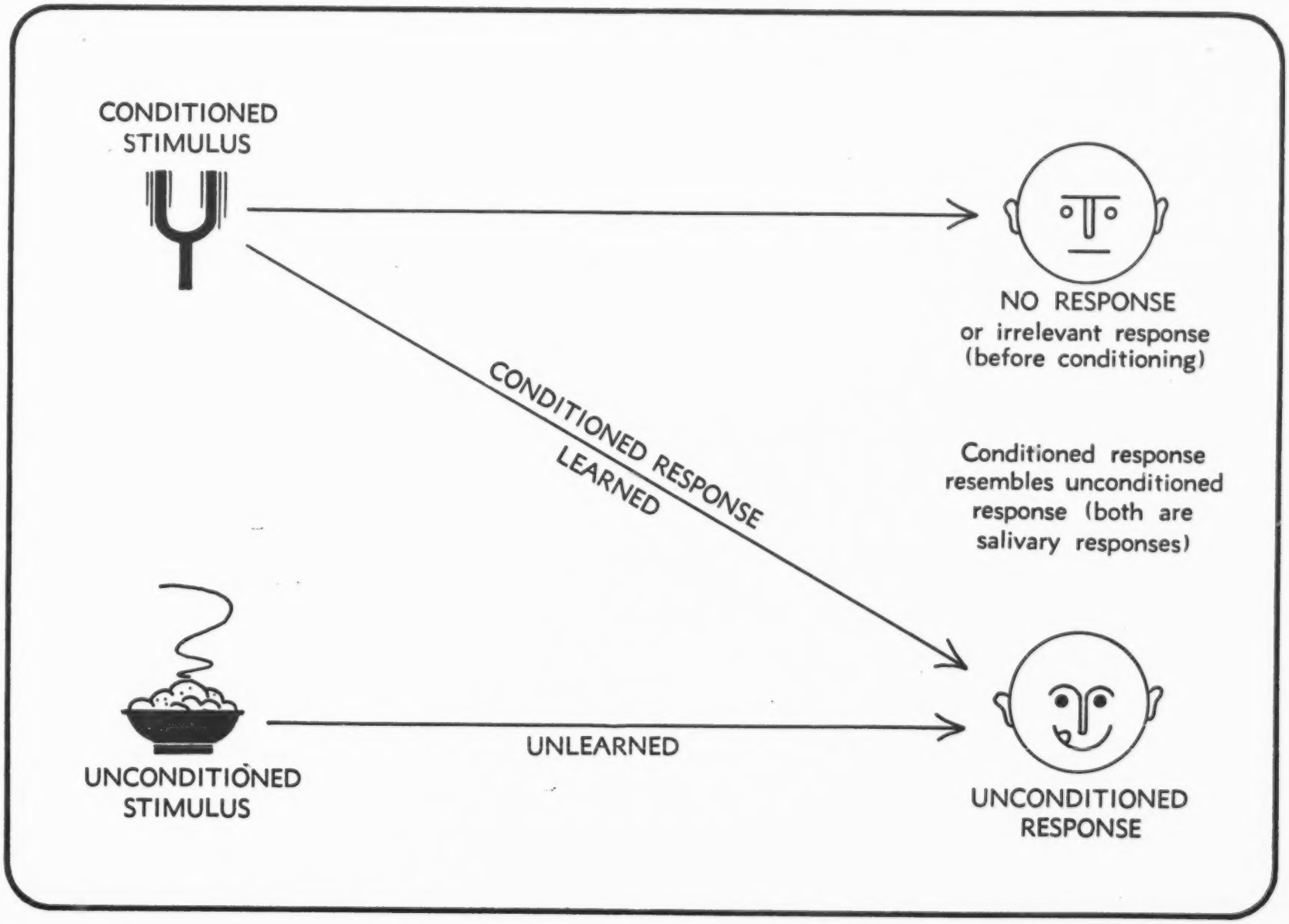
His procedures are extensions and revisions of some of the work originally done by Ivan Pavlov in Russia many years ago. Most educators and trainers are familiar with Pavlov's classical conditioning experiments, the most famous of which was his training (educating?) of a dog to salivate in response to the stimulus of a bell by pairing the bell's ringing with the presentation of meat powder (unconditioned stimulus) until natural salivation (unconditioned response) occurred unnaturally (conditioned response) in the absence of the meat powder.

Conditioning applies to students whose behavior can be effectively controlled by pairing an unconditioned stimulus such as loud yelling at students with a conditioned stimulus such as a quiet request that they please reduce the noise in the halls. The teacher knows that after he has yelled often and loudly enough to inflict auditory pain and engender fear in the students, they eventually follow his more quiet request, "Please be quiet." In order to avoid such pain and fear, students will respond in the expected fashion.

In this manner students learn (are educated, trained, or instructed) to comply properly (conditioned response) with the teacher's soft-spoken requests (conditioned stimulus) in order to avoid his yelling (unconditioned stimulus) which evokes the same overt behavioral response (unconditioned response) of compliance. However, the teacher may have to remind the students of the unconditioned stimulus by additional yelling as the effects of the conditioning gradually wear off. If the reinforcement for each particular behavior is done somewhat randomly and unpredictably, the conditioned response is more likely to remain longer and stronger because the students are never quite sure when the teacher might deliver some more of his unconditioned stimuli. If the reinforcement occurs regularly, the students can predict about when the next unconditioned stimulus is due and anticipate it by behaving acceptably in time. Partial and intermittent or randomized reinforcement tends to prolong the duration for which a conditioned response will be maintained.

Although the foregoing example, as well as many classrooms, use threats and punishments (negative reinforcement) to control student behavior, the use of rewards (positive reinforcement) is far more effective and tells the students what to do rather than what not to do. Such an absence of direction frequently invites learners to indiscriminately test the limits of every new unstruc-

BEHAVIORISTIC THEORY
CLASSICAL CONDITIONING / PAVLOV



tured situation. Such conditions, when chronic, can become untenable and cause a high level of anxiety which interferes with optimum learning.

Skinner and his associates found that when positive reinforcement is presented after a desired behavior is manifest or even approximated, another kind of conditioning can be effected. As opposed to classical conditioning wherein natural physiological stimulus-response reflexes are involved, in operant conditioning, a predetermined behavior for which there is no readily observable or known external stimulus is watched for; whenever the learner exhibits this behavior or some approximation of it, he receives a specified positive reinforcement. If he engages in prolonged independent pursuit of a self-selected learning project, the learner might be rewarded with an "ok," "very good," *A* grade, M&M, marinated olive, psychedelic treat, jag of electricity to his brain's pleasure center, or other peculiarly fitting reinforcement. Whatever behavior is not desired is simply, but not always so easily, ignored until it goes away (is extinguished). Tantrum behavior, for example, is difficult to ignore but can be eliminated in this way.

Instead of a teacher's hollering at children to be quiet, he might wait until that occasion when the children are mysteriously silent and reward them with his praise or approval—assuming, of course, that the children consider praise from the teacher to be rewarding or satisfying. This in turn requires that praise predictably follows their doing or attempting to do those things which are desirable and that various kinds of punishment, including the conspicuous absence of praise, follow their behaving in an undesirable way. The rewarding effects of praise itself are probably the result of conditioning. However, simply saying "good" or "ok" in the same monotonous voice loses its effectiveness very quickly; intermittent and varied reinforcement is more effective for enduring results.

It is possible to explain and manage much of human behavior by means of the classical and operant-conditioning techniques. The systematic application of reinforcement theory makes it possible to insure the mastery of an individualized curriculum after the terminal objectives have been determined by a careful analysis of each component task. Such task analysis enables a programmer to lead a learner step by little step to mastery of the terminal behaviors and understandings. Programmed instruction, whether automated or non-automated, can be a helpful resource to a sophisticated teacher who knows when, how, why and with whom to use it.

Because the degrees of satisfaction which children receive for various rewards vary, it is important that the teacher identify within each individual child what are known as high- and low-probability behaviors. A high-probability behavior is one which a child would very likely want to do when given a choice from among many alternatives; a low-probability behavior is something which a child would not freely choose to do. A high-probability behavior (e.g. watching a favorite T.V. program) can be used as a positive reinforcement to induce a child to engage in low-probability behavior, i.e. the child is permitted to watch a favorite T.V. program on the contingency that he completes his homework.

The teacher, in order to manage the contingencies of the learner, has to know the peculiar characteristics and hierarchy of the most effective rewards and punishments for each individual child. For example, a spelling bee may be fun for a good speller and utterly miserable for the child who is ridiculed or is otherwise embarrassed by his relative inability to spell. This is further complicated by the fact that what is rewarding to a child at one time may be punishing at another; recess time for a child when he is nauseous or injured may be quite obnoxious until he again feels able to participate comfortably or successfully in the required games. It is by knowing these contingencies and appropriately applying them to reinforce successive approximations to certain educational objectives that the teacher is able to maximize learning in his students, regardless of what it is that he wishes them to learn.

COGNITIVE-FIELD THEORY

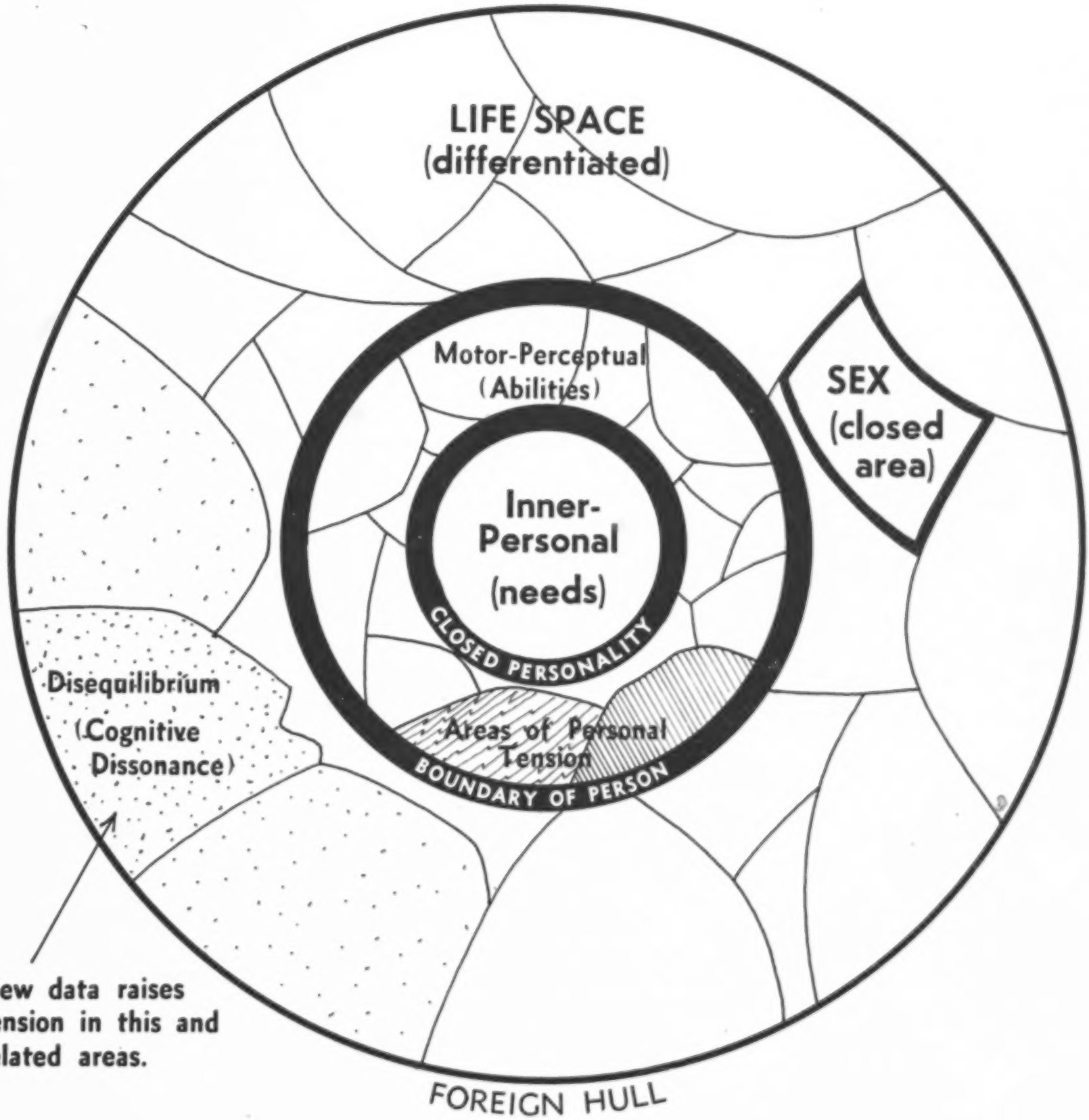
The salient considerations of a theory of learning which is customarily referred to as the cognitive-field theory will be briefly presented. This theory also has its roots deep in philosophy, particularly those schools of thought which are categorized as phenomenological. The root word *phenomena* is used in distinction to *noumena.* The latter refers to things as they really are in concrete reality. Thus, phenomena are aspects of concrete reality *as perceived by an individual.* Hence, "individualized learning" refers to a large extent to how each individual perceives the reality about which he is learning. The significance of this reality is relative to each individual's perception of it. A hot, well-prepared school lunch does not mean as much to the well-nourished child who has had a good breakfast as it does to the child who hasn't eaten since yesterday's lunch. Such differences in perception also condition learning styles.

A contemporary exponent of the cognitive-field theory of learning is Kurt Lewin. He advanced such notions as the individual's *life space,* which is a peculiarly distinct collection of kaleidoscopic experiences through which an individual views the world around him. Each person's life space conditions the way in which he perceives the events which he experiences in the present. These idiosyncratic experiences in turn predispose him to the kinds of events to which he will or will not attend in the future.

In addition to the recognized physiological needs or drives arising from hunger, thirst, etc. which generate a certain tension within the physical system until these needs are satisfied, Lewin postulates an analogous tension for cognitive and affective functioning. He states that the intellectual or cognitive and the emotional or affective domains of man also have drives to maintain a certain balance (homeostasis) among the forces within his understandings and feelings. For example, in spite of a basic curiosity about novel situations, the human being learns in some instances to prefer the status quo as opposed to allowing new information to enter his life space and consequently upset his current equilibrium. Such new information causes what has been called cognitive dissonance. It introduces in the cognitive system a vague awareness of disequilibrium—experienced as tension or anxiety in its non-clinical form.

When a teacher has certain cherished beliefs about the management of children in a classroom environment and these beliefs are seriously challenged by new research which indicates that an opposite or very different classroom management is more conducive to learning, that teacher may feel that not only his ideas are threatened but also that his entire system of beliefs regarding education has been cast into a state of disequilibrium. If this dissonance is a familiar experience and the person has what is called an open mind, he will allow these new ideas to enter and be accommodated and assimilated into his ever-changing life space or

COGNITIVE-FIELD THEORY



cognitive field. If a person has learned to be comfortable with this kind of change and has developed a positive attitude regarding innovations in his life space, he may relish the opportunity to reconcile new information with old notions. He may even actively seek new experiences as exciting challenges.

On the other hand, if a person has been taught or has learned to feel insecure or threatened when such cognitive or affective dissonance occurs and therefore tends to resist the entry of new information or attitudes, he may selectively perceive only those parts of any message which are in harmony with his previous beliefs or feelings, thereby minimizing or even eliminating the tension and disequilibrium in his life space. Such a person has a "closed" mind; he does not want to be confused with more facts and disregards dissonant ideas offered for consideration. They fear the unknown and resist innovations of any kind. Frequently authoritarian in personality, they have a very low tolerance for ambiguity or uncertainty. Such attitudes are manifest in prejudice or pre-judgment–that is, making final judgments before all of the important data are considered.

Various instructional practices apparently engender either a closed-minded attitude or an open-minded attitude in children. When children are treated as though they are identical receptacles for the perennial truths and when all questions have single unchanging answers, a child will likely develop an attitude that learning is just hard memory work and therefore he avoids situations which require additional learning of what to him are irrelevant and thus meaningless facts. He does not have positive feelings about the learning process itself. He finds no pleasure in learning because he has learned to interpret changes in his cognitive field as being uncomfortable and threatening rather than pleasant, exhilarating, and expanding. Regrettably, his attitude emanates from his parents and teachers.

It is a mistake to suggest that children wilfully cease learning; it is more accurate to state that they choose to learn things other than those prescribed for them in school. Unfortunately, many who choose teaching as a career found their satisfaction and success in the system and then feel that they must perpetuate the system for the next generation. One of the most important functions a teacher can perform as a facilitator of learning is that of exemplifying and thereby engendering a zest for discovering new things and developing new understandings and attitudes. To accomplish this function, the teacher must have a positive attitude toward change and a welcome attitude toward new problems which require new solutions.

Motivation and Individualized Learning

The cognitive-field theory is very much concerned with intrinsic drives which motivate an individual to behave as he does. It is noteworthy that most behavior-shaping by external reinforcement is determined by an outside agent who thereby contributes to the dependency or other-directedness of the relatively passive learner. If children are to develop into independent, inner-directed, self-disciplined learners, it is necessary that they take an active part in determining and pursuing learning because of its intrinsic value in enabling them to be masters of their own destiny. Since each individual has his own idiosyncratic ideals which differ in part or wholly from those of his peers and elders, the necessity for individually-determined learning opportunities becomes self-evident.

The preceding is not intended to suggest that behavioristic theory does not concern itself at all with intrinsic motivation. It is safe to say that programmed instruction and most practical behavioral modification procedures which are reported in the literature are largely concerned with a student's responding to a stimulus and being reinforced by rewards not inherently related to the task. An M&M or soda pop or teacher's smile has no essential relationship to the completion of twenty arithmetic problems. According to cognitive-field theory, the experience of correctly solving the problems is sufficient reward if the student finds arithmetic satisfying or meaningful in his life space.

A crucial difference between behaviorism and cognitive-field theories is that the former defines and assesses learning in terms of observable, measurable changes in behavior whereas the latter defines learning as a change in behavior *and/or perception* which is not always observable or measurable. Indeed, a person might continue to behave exactly the same way but for radically different reasons.

The notion of contingency management or operant conditioning can certainly be applied by the individual to himself. Individualized learning should address itself to enabling students to manage their own educational contingencies. This is similar to applying the intrinsic motivators mentioned in regard to the cognitive-field theory.

For example, teachers who manage their own contingencies say to themselves, "I will not get up and get a cool drink until I am finished grading these last three papers." A child can also learn this kind of self-discipline and delayed gratification so that he will say to himself, "I cannot go out to recess until I have finished these last two math problems" (or paragraphs of reading, etc.). Although this kind of learning can be taught, much of it is caught by students who observe teachers and other adults more or less effectively managing their own behavior. The principal drawback found in such contingency management is that the reward (some high-probability behavior such as drinking cool drinks or going out to play) is not inherently related to the task which must be completed in order to receive the reward.

A more desirable arrangement obtains when the task itself has sufficient rewarding properties that it may be pursued for its own inherent value. A task undertaken for its own end is called *autotelic*. This is what is meant by learning for the sake of learning–for the rewarding experience of mastering new behaviors and changing one's perceptions.

Response-Ability

In order to make individualized learning most effective, the teacher is charged with the responsibility of identifying tasks which contain rewards meaningful to the individual learner. However, as stated earlier, each individual has a different hierarchy of behaviors which he would consider to be rewarding or non-rewarding at a given time. If the teacher is willing to allow students to become the stimulators and allow his function to become that of the responder, than *response-ability* will be measured by his ability to make each learning task meaningful and intrinsically rewarding or autotelic for each individual learner. This rules out much of the standardized curricula, since every individual has his own unique constellation and hierarchy of needs, interests, and abilities. The teacher then is regarded as a learning facilitator–a very difficult and imaginative professional role to fill. Instruction must be individually tailored to accomplish an optimum match between the learner, the subject matter, and the method of learning it.

Editor's note by Edwin P. Hildebrand: For quite a long while, experts have concentrated on the question of **why** *children learn. It's a particularly pertinent question; it's been asked often enough that we all know now the importance of motivation.*

Some of the experts are now putting their attention on the question of **how** *children learn. It might be over-enthusiastic to say this is an even more important question, but it certainly doesn't go beyond the evidence to say that it is of major importance.*

We are deeply indebted to John H. Meier, who is an educational theorist most capable of bringing insights into this area down to the point of practical application so that the teacher in the classroom can use them with profit in individualized learning.

WSSSP owes other debts to Dr. Meier. He contributed to the development of the preschool program and was appreciated as a consultant to workshops on continuous progress and individualizing instruction. WSSSP is fortunate in being able to attract theorists and professors of this level to provide the underpinning necessary to the practical, day-to-day work in the classrooms of the small schools.